

2ND ANNUAL INDOOR GROWING GUIDE

HIGH TIMES

SEPTEMBER 1987

EXCLUSIVE SECRETS!

\$3.95
CANADA \$4.50

HOLLAND'S HIGH-TECH GROWERS



HEP CAT GOES TO MEXICO
ED & JORGE ON GROW LIGHTS
DR. INDOORS' GUIDE TO HARVEST

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Indoor Sun

ENERGY EFFICIENT GROW LIGHTS

METAL HALIDE—(balanced growing spectrum)

All systems include an assembled ballast, bulb, reflector, 15' lamp cord and 8' power cord.

- ★ 1000 watt DELUXE—Choice of our 46" polished aluminum super reflective hood (high temp. white enamel available on request) or our 20" adjustable white enamel reflector. Ventilated ballast box with a high quality 6-outlet power supply with a lighted on/off switch and a 15 amp circuit breaker. System includes a 110,000 lumen—12,000 hr. bulb
To upgrade to our 125,000 lumen—12,000 hr. Superbulb \$184.50
Add \$15.00
- ★ 1000 watt STANDARD—18" high temp. white enamel reflector. Ventilated ballast box. System includes a 110,000 lumen—12,000 hr. bulb \$167.50
To upgrade to our 125,000 lumen—12,000 hr. Superbulb Add \$15.00
- ★ 1000 watt ECONOMY—2'x3' polished aluminum reflective hood (not shown). Assembled open ballast. System includes a 110,000 lumen—12,000 hr. bulb
To upgrade to our 125,000 lumen—12,000 hr. Superbulb \$144.50
Add \$15.00
- ★ 400 watt DELUXE—14" high temp. white enamel reflector. Ventilated ballast box with a high quality 6-outlet power supply with a lighted on/off switch and a 15 amp circuit breaker. System includes a 34,000 lumen—20,000 hr. bulb \$134.50
To upgrade to our 40,000 lumen—20,000 hr. Superbulb Add \$10.00
- ★ 400 watt STANDARD—14" high temp. white enamel reflector. Ventilated ballast box. System includes a 34,000 lumen—20,000 hr. bulb \$124.50
To upgrade to our 40,000 lumen—20,000 hr. Superbulb Add \$10.00
- ★ 400 watt ECONOMY—2'x3' polished aluminum reflective hood (not shown). Assembled open ballast. System includes a 34,000 lumen—20,000 hr. bulb
To upgrade to our 40,000 lumen—20,000 hr. Superbulb \$109.50
Add \$10.00



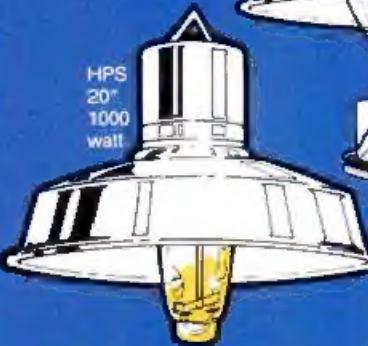
46" Super
Reflective
Aluminum
Hood



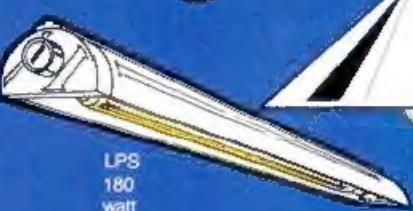
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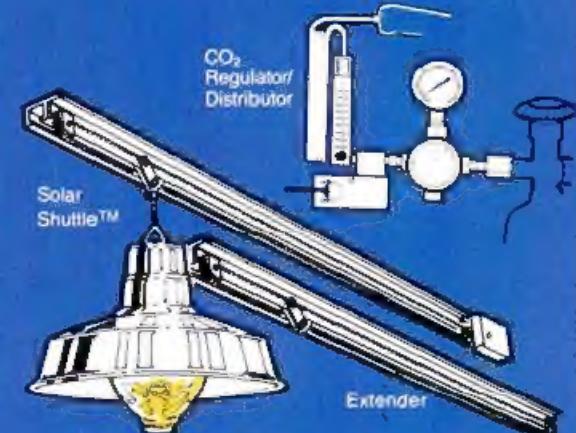
MH
18"
1000
watt



HPS
20"
1000
watt



LPS
180
watt



CO₂
Regulator/
Distributor

Solar
Shuttle™

Extender

ONE YEAR PARTS & LABOR GUARANTEE • 30 DAY MONEY BACK
GUARANTEE • MOST ORDERS SHIPPED IN 24 HOURS
C.O.D. ORDERS WELCOME • NO DEPOSIT REQUIRED
QUANTITY PRICES AVAILABLE • CALL FOR FREE CATALOG.

HIGH PRESSURE SODIUM—(red orange spectrum)

Completely assembled. All systems include a covered ventilated ballast, bulb, reflector, 15' lamp cord and 8' power cord.

- ★ 1000 watt DELUXE—Choice of our 46" polished aluminum super reflective hood (high temp. white enamel available on request) or our 20" adjustable white enamel reflector. 5 KV pulse rated socket. Includes 140,000 lumen—24,000 hr. Sodium bulb \$269.50
- ★ 400 watt DELUXE—14" white enamel reflector. Includes 50,000 lumen—24,000 hr. Sodium bulb \$189.50
- ★ MINI-MIGHT GROW LIGHT—Our compact powerful (16,000 lumens) grow light employs a highly efficient High Pressure Sodium lamp (3 year bulb life) and a self-contained Transformer-Ignitor. Costs only 15¢ a day (18 hours on) or about \$4.50/month to operate. 15" reflector—good for 3'x3' area. Sale priced at \$99.00+\$5.00 shipping, anywhere in U.S.A. \$99.00

LOW PRESSURE SODIUM—(our most efficient light)

- ★ 180 watts produce 33,000 lumens. Great for flowering. Excellent for side light. Deluxe fixture. Ventilated ballast box \$195.00

ACCESSORIES:

- Replacement light bulbs available for all our systems at our low everyday prices.
- ★ 15 amp Paragon timer (works on all our systems) \$14.95
- ★ CO₂ Regulator/Distributor—Maintains CO₂ at a constant level while the light is on to promote up to 25% increase in growth. For growing areas 25 sq. ft. to 1000 sq. ft. Includes all gauges and distribution lines. Plugs into your light's timer (tank not included) Sale Priced \$139.00
- ★ Solar Shuttle™ Track—moves your lamp quietly and efficiently back and forth above your plants on a 6-foot track in 40-minute cycles increasing the coverage of your lamp \$99.00
- ★ Solar Shuttle™ Extender—adds another 6-foot tract to your Solar Shuttle™ so you can run two lights off of one shuttle \$39.95
- ★ Green Leaves Nutrient—All purpose liquid nutrient. Ideal for all stages of plant growth. Use with soil or hydroponic systems.
• 12-oz. Bottle \$3.95
• 1 Gallon \$19.95
- Grow and Bloom Nutrient in granular form available on request.



ENERGY SAVERS UNLIMITED, INC.

22138 SOUTH VERNON AVE. #C, TORRANCE, CA 90502

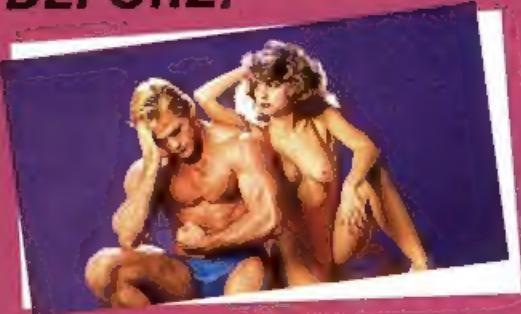
Toll Free Outside California (800) 421-2994 In California Call Toll Free (800) 538-3400

Prices do not include shipping.



**GET THINGS
GOING WITH**

BEFORE!



**NOT
SURE?
SAMPLE
PACK**

MAXI PACK
1000 TABLETS
& CAPSULES
TOTAL/10 TYPES
\$42.50
CODE #26

MINI PACK
500 TABLETS &
CAPSULES
TOTAL/5 TYPES
\$22.50
CODE #31

AFTER!



**FREE INFORMATION
(213) 376-7422**

45 TABLETS \$7.95
90 TABLETS \$12.95
180 TABLETS \$24.95
"FREE SAMPLE"

CODE
#7

NOTE

Our products bear our trademark. They cannot be confused with any other product on the market. Any attempt to offer these products for sale as a controlled substance or prescription drug may be a crime. This may result in criminal prosecution. Compliance with any law is the purchasers responsibility. **Caution:** Individuals under medical care should consult their physician.

PAYMENT:

- MONEY ORDER
- PERSONAL CHECK (MUST BE BANK PRINTED WITH THE SHIP TO ADDRESS ACCOUNT MUST BE 6 MONTHS OLD. NO CHECKS OVER \$50.00)
- PAYMENT TO 20TH CENTURY DISTRIBUTORS
- C.O.D. (CASH ON DELIVERY) (PHONE IN ONLY)
- ALL ORDERS IN US FUNDS
- Offers subject to change without notice. Take only as directed. Read all package statements, no sales to minors or where prohibited by law. The advertised products have various levels of non-controlled ingredients. O.T.C.s Not to be Mixed with Alcohol.

FAST ONES™

**STIMULANTS, DIET AIDS
SLEEPING AIDS**

**FREE 100
#30**

With any purchase. Send \$3.00 additional to help cover shipping and handling.

LOWEST PRICES ANYWHERE

**WE WILL MEET OR BEAT ANY
REASONABLE PRICES BY 10%**

ORDERS SHIPPED IN 24 HOURS

100% GUARANTEE

FAST ONES™
"Super Strength"

SALE
1000 \$39.95 \$29.95
100 \$9.95 \$6.25

FAST ONES

"FREE SAMPLES"
CODE
#30
200 MG CAFEINE

"FREE SAMPLES"
CODE
#26
100 MG CAFEINE

FAST ONES™ FIGHTS THAT DROWSY FEELING BY IMPROVING YOUR STAMINA, COORDINATION, CONCENTRATION!

FAST ONES™ NEVER LETS YOU MISS THOSE SPECIAL MOMENTS!

FAST ONES™ GIVES YOU EXTRA STAMINA TO LOSE THOSE UNWANTED POUNDS AND INCHES THAT MAKE YOU FEEL SO UNATTRACTIVE AND UNDESIRABLE!

FAST ONES™ LETS YOU LIVE A MORE EXPERIENCING LIFE!

CHOOSE FROM A WIDE VARIETY TO GET YOUR EXACT TYPE AND STRENGTH YOU PREFER. THAT'S SOMETHING STORES CAN'T DO!

NOTE: SAMPLES ARE FREE BUT WE ASK THAT YOU ENCLOSE \$1.50 PER SAMPLE TYPE YOU WANT TO COVER SHIPPING AND HANDLING CHARGES. (EXAMPLE 3 SAMPLES TOTAL \$4.50)

NOTE: EACH SAMPLE HAS 5 PILLS ENCLOSED.

REGULAR

MEDIUM

MILD
(weak)

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When Discretion Is Your Growing Concern.



Indoor Gardening Made Easy. With URBAN PLANTATION's™ innovative new packaging in hydroponics or soil, you'll be a successful CLOSET FARMER™. With one toll free phone call you'll have everything you need to grow for a full year. Hydro Willie has packaged a superbly designed hi-tech growing system. Your choice of the 175w Metal Halide (15,000 lumens), or 150w High Pressure Sodium (16,000) lumens comes with a 15" reflector and an 8' power cord. In addition there is the standard 160w Full Spectrum side lighting, on wheels and easily moveable. The CLOSET FARMER is discreetly enclosed in a stylish oak finished cabinet that will enhance your home. Inside you'll find an amazing 27 cu. ft. of energy efficient growing space, designed to produce results that will rival mother nature. With 15 minutes weekly maintenance you can get 100% results within 3 months from seed.

CLOSET FARMER™ kit includes:

- Cabinet—63" x 33" x 23"
- Mylar Reflection & Light Sealing
- Light Fixtures & Spectra Lights (spectrum of sunlight)
- 24 hr. Timer, Thermostat & Exhaust Fan
- Pots & Drain Pans
- Assembly & Growing Instructions
- One year Supply of Nutrients
- All Necessary Hardware & Cords

The CLOSET FARMER™ System II—\$449.00

The Deluxe CLOSET FARMER System II with CO₂ enrichment & 4 hydro modulars—\$745.00 (electricity costs average \$5.00/\$6.00 per month)

The original CLOSET FARMER System I, with 240w Spectra light is still available—\$399.00

The Deluxe CLOSET FARMER System I with CO₂ enrichment and 4 hydro modu-

lars—\$699.00 (electricity costs average \$3.00/\$4.00 per month)

URBAN PLANTATION™ Accessories
The CLONING FARMER™ Kit will turn any existing CLOSET FARMER into an efficient cloning machines. Kit includes cloning modules, pump, pH kit, timer, a one year supply of rock wool and growing nutrients.

- 12 Clone Model—\$129.00
- 20 Clone Model—\$165.00

Hydro kits for the Deluxe Systems include four AQUAFARMS™ (a four module growing system) growing medium, pump, pH kit, and a year's supply of nutrients. Four AQUAFARMS—\$195.00

The CO₂ ENHANCEMENT KIT increases yield by 25%-30%, and speeds growing time. Kit includes industrial CO₂ flowmeter, short range timer, solenoid valve. (Tank sold separately—\$99.00.)—\$158.00

CUSTOM FARMER™ Kits and Consultation Services

Hydro Willie can outfit any closet or room in your home—Kits start at \$200.00 (and up).

Hydro Willie is the creative force behind URBAN PLANTATION and the CLOSET FARMER. With 11 years experience as an authority on hydroponic gardening and agriculture he is committed to providing you with the finest quality, easy to operate products, at fair prices with the fastest delivery. He is ready to answer all your questions and to support your URBAN PLANTATION purchases with the friendliest and most dependable service in the indoor growing industry.

Our Guarantee To You

URBAN PLANTATION offers you the finest self contained growing systems ever developed. Following the easy set up a mere 15 minutes of weekly maintenance can yield 100% results within 3 months.

All our lamps carry a one year warranty. All other products carry a full 2 year guarantee. Ask for our free catalog, compare prices, save time, energy, and money.

Stop into our showroom or write to:

URBAN PLANTATION
P.O. Box 1000
#6 Bolinas Road, Fairfax, CA 94930

For Ordering or Free Catalog Call Toll Free

800-332-7555 —

California Residents Call 415/258-9226

Receive a free URBAN PLANTATION "T" Shirt with every CLOSET FARMER. California residents please add 6% sales tax. Money orders, credit card and C.O.D. orders shipped within 48 hrs. C.O.D. orders require a 50% deposit. Above prices do not include shipping. Personal checks held for bank clearance. Dealer inquiries are welcome. AQUAFARMS manufactured by General Hydroponics.

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**COVER PHOTOGRAPHY
BY JEFF VAUGHAN**

On the cover: Technicians from Holland's Super Sativa Seed Club (SSSC) take a pH reading on three young clones. Behind the clones is an instrument for monitoring room temperature and humidity.



HIGH ★ TIMES

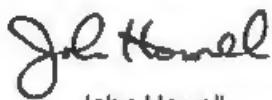
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FOUNDING EDITOR
THOMAS KING FORCADE, 1945-1978

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EDITOR'S NOTE

• "Drug users face an almost zero chance of arrest," complained a recent editorial in the *Wall Street Journal*. "Why aren't we busting users?" Typically inaccurate—users are busted in this country—and woefully ignorant—the *Journal* also doesn't seem aware of the government's own figures which estimate the regular pot-smoking population at between 18 and 20 million—this cry for action is a prime example of the "quick fix" mentality which proposes to solve our so-called "drug problem." Just what criminal penalties would be appropriate for the approximately ten percent of the American population that enjoys pot, the *Journal* didn't say (though the editorial admitted that "experts worry about jail space"). • But the *Journal* went on to say that there is a "deeper problem: We may not yet have totally won the fight against the permissive drug culture of the 1960s and the '70s." If this stupid tripe is what passes for serious info about drug matters for the country's high-powered, coke-snorting business executives, then no wonder we are now the world's largest debtor nation and a country with a nearly three trillion dollar annual budget deficit! • The real drug "problem" in America is the dumb policies of the government which are supported by the establishment which reads the *Journal*. Not until criminal penalties are removed from drugs will gangsterism cease, substance abuse education and treatment really begin to be effective, and millions of Americans who enjoy the recreational use of psychoactive substances be seen for what they are: true-blue, freedom-loving citizens looking for a **high time!** •

From on high,



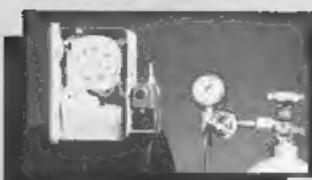
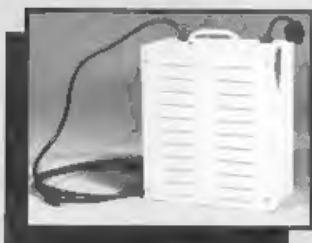
John Howell,
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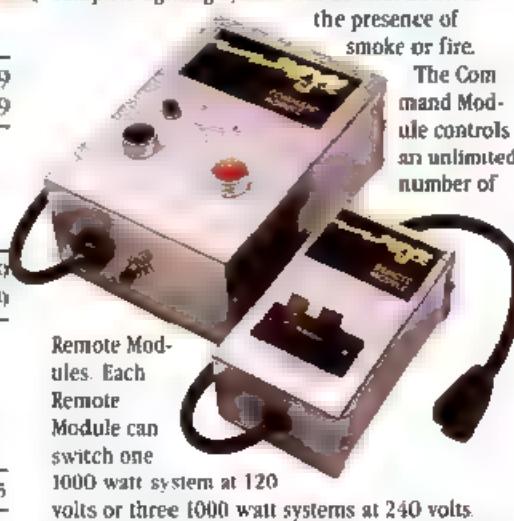
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Sept. 1976 No. 9

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—Gunther Christ
Las Cruces, New Mexico

THE DEAD LIVE, III

In response to the letter from "Punk Has-Been" ("Letters," June '87), I have this to say: I am a Deadhead. I enjoy the original punk rockers like Lou Reed and the Sex Pistols. I know many true punks who enjoy the Grateful Dead. So quit giving Deadheads and true punks a headache with your watered-down imitation of anarchy, douche bag!!! Hippies and Punks Unite!!!

—Col. Moon and Sid
Buffalo, New York

Send your letters to HIGH TIMES "Letters," 211 E. 43rd St., NY, NY 10017.

Yeah, this response is addressed to YOU, dickhead, the asshole who wrote the "Punk Has-Been" letter. If you don't like reading HIGH TIMES, put your \$3.95 back in your pocket and shut the fuck up! This IS the Eighties! People are entitled to their own opinion, except fuckin' losers like you!!! Where do you get off saying HIGH TIMES is irrelevant, and even comparing it with *Lampoon*, a goddam magazine for ten-year-olds! The Grateful Dead are a way of life. I wish the other Deadheads out there would speak up.

—The Roach
Port Washington, New York

P.S. How about a response from you too, "Punk Has-Been?"

JUDGE NOT

Someone told me that in a past HIGH TIMES, there was a quotation from the Bible about marijuana. Did you make this up? If not, what is it? It would be very useful to throw in the faces of certain religious people.

—The Buckhead Dopers
Atlanta, Georgia

Make up a quote from the Bible? What kind of people do you think we are? It's right there in the Good Book: "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth...to you it shall be for meat." (Genesis 1:29). And again: "He causeth the grass to grow for the cattle, and herb for the service of man" (Psalms 104:14). And that's just for starters, okay?

KNEE JERK

Mike Smith's "Camp Out" crapola (May '87) is an ecologist's nightmare. With so little pristine, high-country wilderness left, why glorify damming up low summer water flows and cutting down green growth? Ever heard of Earth First? At least "Ask Ed" is great

—B.H.
Portland, Oregon

You're right on one point: Ed is great. And yes, we've heard of Earth First: See our cover story on the eco-guerrillas in the June, '87 issue.

FIRE STRAIGHTS

The government has established that drug test results may legally be used as criteria for the termination of employees. However the fashion in which employers use the results has not been established. That is, an employer might retain all his employees who had positive drug tests and terminate those who came up clean. Perhaps if a few employees were terminated because they came up clean, our gung-ho drug testers might gain a clearer idea of why the Fourth Amendment was added to our Constitution.

—Brian S.
Modesto, California

NEW DEAL

I am a newcomer to growing dope. I would like to know where I can find all the information on growing, flowering, budding, etc.

—Curious
Fall Branch, Tennessee

You're holding the best source of info about growing in your hand. HIGH TIMES. May we also suggest any and/or all of the growing books advertised in our bookstore (pp. 94-95) and throughout the magazine, as well as our grow issue and comix giveaway on page 13.

TOPSY TURVY

I'd like to say that the "Top 80" isn't. Simply because you censor it for shockin' material that would offend us. Gee, thanks.

—R.G.
Lompoc, California

Okay, this is it! We're tired of all the idiotic abuse and endless envelope opening that "Top 100" (nee "Top 40" or "80") ballot box stuffing has brought down on our heads! Starting next month, it's one person, one vote! Now, the "Top 100" will truly reflect the voice of the majority of you readers.

DANSCO INDOOR GARDEN CENTERS

1000 HPS - \$259⁰⁰
 400 HPS - \$189⁰⁰
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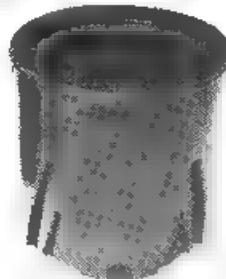
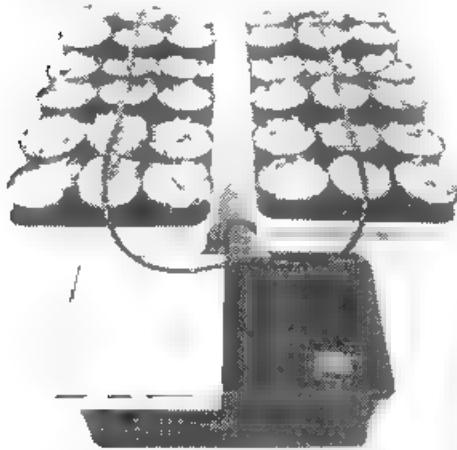


HYDRO FLO I \$249.00

Expansion Module \$16.00

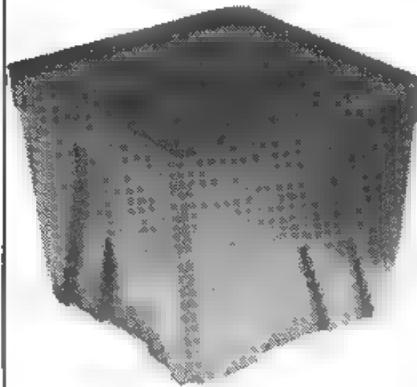
NEW Hydro Flo I includes 6 trays with 36 one gallon Pyramid pots reservoir, timer, pump, rockwool 12 week nutrient supply and pH Control Kit Basic system covers 4' X 5' area for 10 - 12 week cycle Double the size of this system for only \$96.00 more!

Larger pumps and reservoirs allow us to custom fit these systems to your needs



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1 gallon (round) and 3 gallon (square) Pyramid pots provide exclusive "root pruning" feature which stimulates new root production for up to 250% more roots than other pots of equal size. Available in either white or black

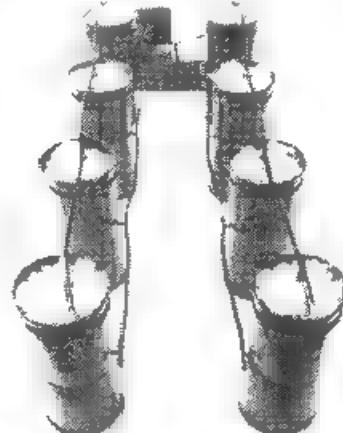


HYDRO CELL II \$209.00

Expansion Module \$6.00

Hydro Cell II includes 8 two gallon grow cells with reservoir timer, pump, rockwool, 12 week nutrient supply and pH Control Kit. Recirculating system is easily expandable to 30 cells without increasing pump size or reservoir capacity

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PIONEERS IN THE MODERN ERA OF RESEARCH ON THE MINERAL NUTRITION OF PLANTS...ONE OF THEM WILL CHANGE YOUR LIFE



LUTHER BURBANK lived from 1849 to 1926, and not before or since has there been a greater contributor to plant development. Every domesticated fruit or vegetable or flower has been produced by Mr. Burbank directly or by his methodology.

Mr. Burbank's methodology was extremely simple: (1) First he would GATHER the most extensive seed stock of a particular species from all over the world. (2) Then he would PLANT all of the seeds into sets, together. From the resulting ten thousand plants, he would 1. SELECT those or 2. those that had the most pronounced characteristic. (size or shape or scent or color) who ever he was looking for. (3) From those "near" the plants all of the seeds were PLANTED and in the resulting ten thousand plants, only one or two would be of SELECTED that further developed more of the desired characteristic. This process of planting and selection would be repeated as often as necessary from a few generations to hundreds of generations until Mr. Burbank would release the final seed stock to the rest of the world.

Mr. Burbank grafted one hundred different types of apple branches onto a single apple tree and each branch bore a completely different fruit. In his first year for his personal selection inventing this grafting technique he squeezed the thousands of years of research into a few. The results of his work from potatoes to apples—EVERY domesticated fruit, vegetable or flower are what we grow today.

The Burbank Potato Quadrupled World Production in One Year. Luther Burbank never needed a lot of space. In his lifetime he conducted over one hundred thousand series of experiments and changed the world on less than three acres of land.



DENNIS ROBERT HOAGLAND 1888-1949 was the inventor of the four salt Hoagland solution from which all HYDROPONICS are based. Although a brilliant botanist, Dr. Hoagland was interested in only one thing, the BIO-MASS (size and weight) of the TOMATO produced hydroponically. Working under the scientific assumptions of the early 1900s, Dr. Hoagland's world assumed four things:

1. Plants had a life cycle leading to death. WE NOW KNOW plants have a very different way of achieving a life and death cycle than does the human being. Humans are more genetically structured toward their life and death cycle than plants. Plants also environmental factors are more important than life and death cycle but themselves as well. Such things as (1) PHOTOPERIOD (length of time under light and dark), (2) THERMO PERIOD (length of time under temperature variation) and most importantly (3) "NUTRIENT PERIOD" (length of time under a given nutrient configuration).

2. Maximum SIZE and WEIGHT before death (1) and (2) the shoot to root ratio known as the "root to shoot to fruit ratio" was the absolute goal. WE NOW KNOW the "root to shoot to fruit ratio" is a fallacy. There is no such thing. While keeping the fruit exactly the same size as normal, both the root (below the soil) and the shoot (above the soil) can be minimized. And by reducing the inter-nodal lengths (distance between the budding sites) from an average of 6 inches to less than 1 inch, the number of the normal sized fruit will increase to thousands per plant. (*Footnote See inter-nodal length graph in "The Garden" brochure.)

3. Plant lush feeding. Excess nutrition means nothing. WE NOW KNOW plant "lush feeding" kills the plant. The basis of the hydroponic method is that a fresh nutrient supply is pumped in while the used nutrient supply drains out. This allows the plant to absorb excess amounts of calcium. It allows the plant to absorb calcium to the degree that it becomes toxic to the plant's own elements like N, P, K, Mg, Na, Cl, etc. Too much calcium and the plant gets GARDENING OF THE ARTERIES and dies after one seasonal growth period.

4. An aqueous water bound system with a buffer (not having a cation exchange capacity (CEC)) was best. WE NOW KNOW an aqueous (water) based nutrient with a surrounding hydro system without a buffer is protect the plant's arteries. Water root, a thick fleshy root that has layered it self with fat to protect itself. Nowhere near the amount of root surface area is produced hydroponically (water bound) as when the roots are buffered against excess concentrations by a soil medium.

WE NOW KNOW that the soil mediums used by Dr. Hoagland, such as perlite vermiculite and sand have no buffering action or CATION EXCHANGE CAPACITY (CEC). The CATION EXCHANGE CAPACITY of a soil medium is the ability of that medium to ABSORB AND RELEASE a given solution. The cation exchange capacity of the soil medium protects the root system and allows it to produce healthily in a soil mixture, producing three times more square inches of root surface area. The greater the root surface area, the more efficient the nutrient uptake for faster growth.

The early 1900s did not have the advanced techniques. In 1986, equipment for testing nutrient solutions and plant tissue such as the gas-liquid chromatograph assay (GLC), Thin Layer Chromatograph (TLC) and high speed atomic absorption equipment were not available.

With the aid of the computers since 1981, the medical profession by comparison has advanced in the last 10 years more than in the preceding 2,000 years. If Dennis Robert Hoagland had access to 1986 technology in 1920 he never would have designed the hydroponic system.



JEFFERY JULIAN DEMARCO 1951— is President and Founder of PYRAPONIC INDUSTRIES and is the inventor of the methodology known as GROWING PLANTS PYRAPONIMETRICALLY and the PHOTOTRON.

Three things are required for a plant's pyraponimetrically: (1) A 100% living 4 day growth chamber known as the PHOTOTRON; (2) A specific METHODOLOGY to plant with and manipulate construction; (3) A very specific NUTRIENT SUPPLY COMPUTER DESIGNED IN PARTS PER MILLION (PPM) for each individual PHOTOTRON. The exact nutrient calibrations are individually calibrated based upon the root samples taken from the plant root one after FORTY FIVE DAYS of plant growth and one after 90 DAYS of plant growth. ONLY TWO ARE REQUIRED.

Mr. DeMarco's Masters thesis was on the cannabinoid profile of marijuana. After working under both federal and state license in a laboratory at a major university for over two years, and since 1976 has developed the phototron, the methodology and the chemistry to study the internal workings of the plant (not just the SIZE and WEIGHT, but ultimately important to study the MOLECULAR and PHARMACOLOGIC properties of the plant). The research developed in part of Mr. DeMarco's research PERTAINS TO ANY PLANT.

Plant research is the study of molecules produced inside plants. This type of study requires very sophisticated equipment like the Gas-Liquid Chromatogram (GLC), Thin-Layer Chromatogram (TLC) and Atomic Absorption.

THE size of the molecules produced by the marijuana plant is so microscopic that 100,000 molecules end to end would sit on the head of a pin. When you're concerned about growing structures so infinitely tiny, what difference does the size of the plant make?

In hydroponics, in any horticulture Plant Physiology, Soil Chemistry and Horticulture a root to shoot to fruit ratio requires a large root and a large shoot to grow large fruit.

Growing plants pyraponimetrically (by exactly measuring all 21 environmental elements) requires the plant to produce minimal root, minimal shoot (inter-nodal lengths) and maximize the number of budding sites and size of the bud, flower or fruit.

To develop the AT PHOTOTRON, in the CHEMISTRY and C. the plant manipulation methodology known as GROWING PLANTS PYRAPONIMETRICALLY. In the 1980s, this was used for just a unique project.

The PHOTOTRON is designed to: (1) GROW 6 PLANTS THREE AND ONE HALF FEET TALL IN 45 DAYS. (2) Duplicate exactly the quality of the plant as it is produced and (3) RE-CUT FLOWER AND RE-BUD PLANT MATERIAL EVERY 45 DAYS UP TO 8 TIMES PER YEAR. (4) NEVER KILL THE PLANTS YEAR AFTER YEAR. (5) BE REMOVED FROM EVERY DAY. (6) The system is designed for plant removal, not containment and (6) To produce 6-8 ounces of plant material every 45 days.

Growing Plants Pyraponimetrically will produce more indoor plant production as we know it today. At PYRAPONIC LABORATORIES over 24 PHOTOTRONS are used in the 1980s. Today PYRAPONIC LABORATORIES have successfully cataloged 17 varieties of flowering plants, 14 varieties of fruits and vegetables, 8 varieties of tobacco and will force flower roses 365 days per year.

As you can see, PYRAPONIC INDUSTRIES will mass market the PHOTOTRON through the major retailers on television and radio. I will look forward to working with you. Thank you very much.

Jeffrey Julian DeMarco
President and Founder, Pyraponic Industries

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OVER 15,000 PHOTOTRONS SOLD WORLDWIDE - INTRODUCING THE

PHOTOTRON 2

HAWAII VS THE PHOTOTRON

Hello, my name is Jeffery DeMarco, President and Founder of PYRAPONIC INDUSTRIES.

My master's thesis is on the cannabinoid profile of marijuana. I tell you this for historical footnote only.

In pursuit of my own master's thesis, I generated the most extensive popular literature library in the world. Then, I generated the most extensive scientific bibliography in the world. I then went into a laboratory under Federal license at a major university in which I designed a laboratory grade growth chamber called the PHOTOTRON.

If you read all of the popular literature, I did. All of the scientific literature, I did. And look at every apparatus that is in High Times, you will find one common denominator. Every system, UP TILL NOW, has attempted to re-create Hawaii. I suggest that when you finally achieve the re-creation of Hawaii, you can do NO BETTER than Hawaii's results. AND WHAT ARE HAWAII'S RESULTS?

In fact, you will grow the plant 6 to 9 months, 6 to 12 feet tall. In fact, you will average a 6-inch internodal length (distance between budding sites). In fact, have a 10% budding ratio at the tops of the plant. In fact, throw away 90% of the plant material (leaves/shake). And in fact, YOU MUST START ALL OVER AGAIN.

Look. The only thing I'm waiting nine months for is a baby, number one. Number two, I do not want a tree in my house. And number three, I am not going to pay the ELECTRIC BILL TO PRODUCE THE SUN somewhere in my closet. Do not let its pretty looks fool you. Do not let its size (3½ feet tall x 18 inches wide) fool you. Do not let its weight at 17 lbs. fool you.

The PHOTOTRON will draw \$4.00 per month in electricity (average). My system is totally different.

In fact, you will grow 6 plants three and one half feet tall in 45 days, guaranteed. You will maintain a one-inch internodal length, guaranteed. That each plant will produce 1,000 budding sites, FROM TOP TO BOTTOM, guaranteed. And there will be 6 plants per individual PHOTOTRON, guaranteed.

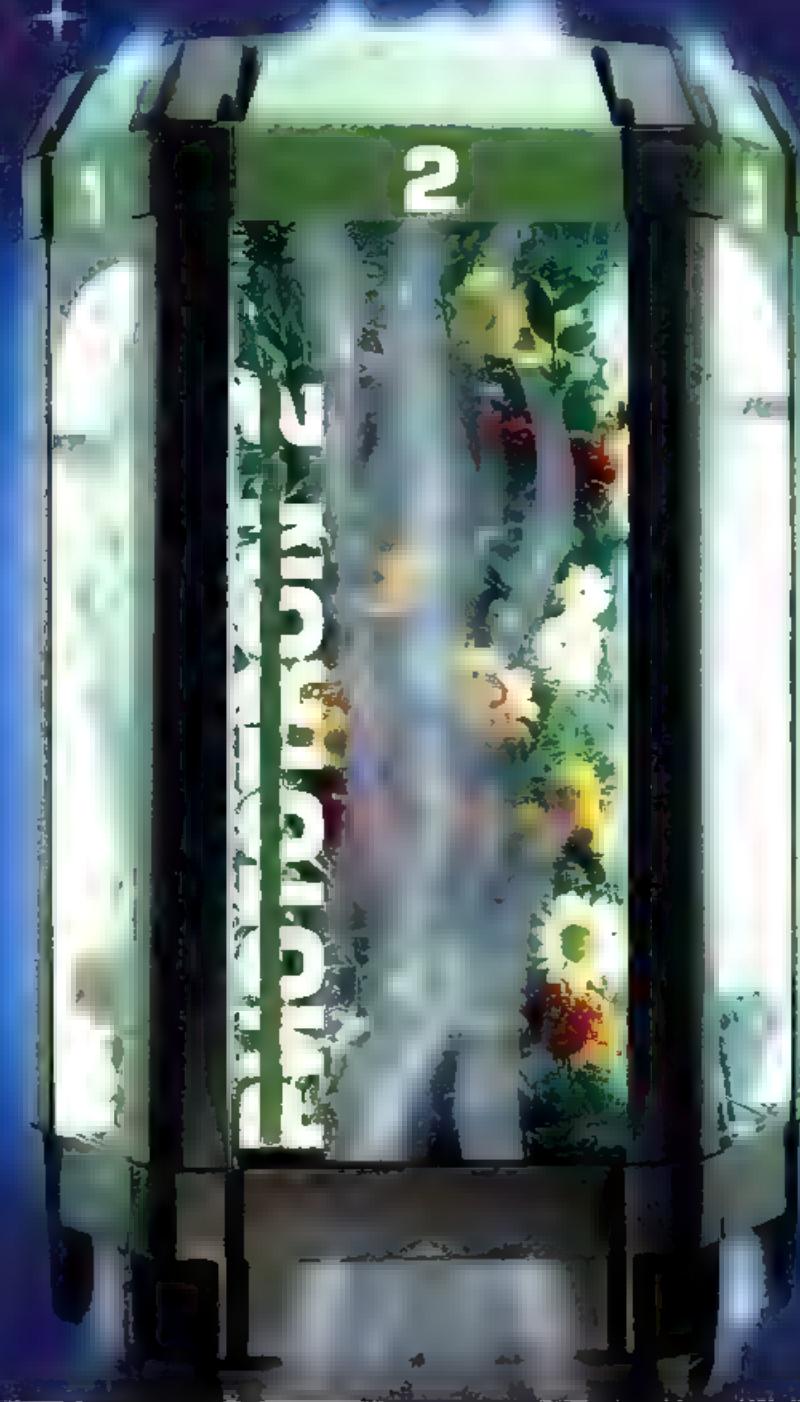
And this is the only system in the world where you can re-flower and re-bud the exact same plants every 45 days, up to nine times per year without killing them off, EVER. Then, you may re-flower and re-bud the exact same plants every 45 days up to nine times per year while you remove from the system every single solitary day. Every day (average 6-8 oz. every 45 days). You remove from the PHOTOTRON every single solitary day, beginning on day 20 from seed germination.

I personally guarantee and service back the PHOTOTRON, so do not let its technical nature throw you. You will require THREE PAGES OF INSTRUCTIONS ONLY. Because the system is TOTALLY COMPLETE. You will do three things: 1. Select your seed. 2. Plug the system in. 3. Water it.

Then, if you have any questions at all, you may call me direct. Ask your question. Get your answer. And carry on about your business. You cannot fail with my PHOTOTRON. I do not allow any of my PHOTOTRONS to fall below SHOW-CASE. I have personally guaranteed every PHOTOTRON that has ever been sold. And I have never had one returned. I am not starting now.

"If you do not learn more about plant production than you have ever learned before, I will pay you for the call."

Jeffery Julian De Marco



THE PHOTOTRON		Money	20	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Height System	50%	1	NO	NO	NO	NO	NO	NO	NO	NO	NO
Light	LINE SELF SHADING LINEAR FEET OF LIGHT SPECTRUM ADJUSTABILITY										
Nutrients	COMPUTER DESIGNED FOR EACH SYSTEM GUARANTEE FEMALE SEX NEVER KILLS THE PLANTS ONE-INCH INTERNODAL LENGTHS - 1,000 BUDGING SITES PER PLANT RE-FLOWER AND RE-BUD SAME PLANTS SEVEN TO EIGHT TIMES PER YEAR TOTALLY SELF SUFFICIENT TO LEAF SATURATION										
CO ₂ Service	SERVICE NOT LINE FOR QUESTIONS										

If you do not learn more about plant production than you have ever learned before, we will pay you for the call. CAN YOU AFFORD NOT TO CALL US. Or, send \$8.00 money order for our brochure, "THE GARDEN-GROWING PLANTS PYRAPONITRICALLY" to:

PYRAPONIC INDUSTRIES, INC², P.O. BOX 1071, MELROSE PARK, IL 60160

*photograph presented from university-conducted research for Masters Thesis entitled "Factors Controlling Resin-Production and Plant Growth," pertaining to any plant.

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PYRAPONIC LABORATORIES: GROWING PLANTS PYRAPONIMETRICALLY

PYRAPONIC AND CULTURES MAINTAINS (1) The most extensive scientific literature library in the world (2) The most extensive popular literature in the world (3) The most extensive library of Data Packages and Soil Analysis selected from over 2500 TECHNIQUES sold worldwide (4) On premises, over 25 PYRAPOTRONs with the capacity of three shelves each so that up to 75 experiments may be ongoing at any one time. Jeffery Julian DeMarco, President and Founder of PYRAPONIC AND CULTURES and PYRAPONIC LABORATORIES, U.S. maintains his PYRAPOTRON for the purpose of killing plants. It is only after experimenting with the parameters of death at PYRAPONIC AND CULTURES that the PYRAPOTRON can perform so miraculously around the world. Said to be the number 1 herbicidal maniac, Mr. DeMarco has full-time laboratory technicians on staff and has the most extensive technical consulting network from Universities around the world. PYRAPONIC AND CULTURES maintains the most sophisticated on-premises computerization for data analysis and retrieval in the world. Thousands of experiments have been conducted and thousands more will be ongoing to expand ever further the performance of each PYRAPOTRON. As PYRAPONIC AND CULTURES introduces new methods or nutrient formulations, each PYRAPOTRON owner is contacted so that every PYRAPOTRON is upgraded long after it has been purchased.

THE PYRAPONIC AND CULTURES PYRAPONIMETRICALLY ON YOUR OWN

GROWTH PATTERNS OF TOMATOES GROWN PYRAPONIMETRICALLY



Young tomato plants in vegetative stage.



Young tomato plants beginning to flower and fruit.



Fruiting less than an inch apart



"Normal" fruit development with a reduced root-to-shoot ratio

GROWTH PATTERNS OF CUCUMBERS GROWN PYRAPONIMETRICALLY



Typical testing pattern by Pyraponics Plants nearing top of Phototron depicting the morphological differences of cucumbers grown under identical conditions except one nutrient level.



Plants filling the Phototron
In less than 45 days.



Tremendous flowering and fruiting less than an inch apart



"Normal" fruit development with a reduced root-to-shoot ratio

HERBS, VEGETABLES AND FLOWERS GROWN PYRAPONIMETRICALLY



Herbal garden at 65 days of Parsley, Sage, Basil, Oregano, Thyme and Chive.



The hottest jalapeño pepper grown anywhere in the world.



Laboratory experiment producing complete root systems on the stem structures of flowering marigolds.

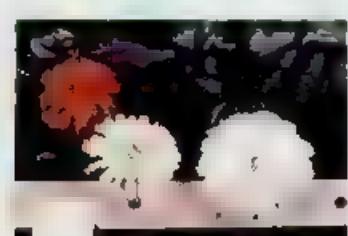


"Normal" marigold flower size produced with reduced root-to-shoot ratio.

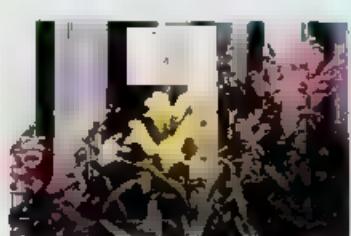
GROWTH PATTERNS OF ZINIAS AND SNAPDRAGONS GROWN PYRAPONIMETRICALLY



Day 44 Phototron jammed with flowering zinnias.



Day 52 "Normal" zinnia flower size produced with reduced root-to-shoot ratio.



Day 46 Phototron jammed with flowering snapdragons.



Day 58 "Normal" snapdragon flower size produced with reduced root-to-shoot ratio.

HIGHWITNESS NEWS

SEPTEMBER '87 • NO. 145

- *BEER CIVILIZES HUMANKIND
- *FREAK LIGHTNING LAUNCHES MISSILES
- *DOCTORS IN DRUG SCANDAL
- *GO GO GIRL OF THE MONTH
BRIGITTE Bardot

COPS TRASH HASH MUSEUM

(The Hash Info Museum, located in Amsterdam in the Netherlands, was closed down for several hours in a police raid while many of its exhibits were permanently removed from display. Although Dutch officials are permitting the Museum to continue operation, many of its most interesting and informative exhibits might never be open to the public again. To get the lowdown on the Museum and its recent shutdown, HIGH TIMES sent correspondent Dale Ashmun to Amsterdam to investigate.)

DID YOU KNOW that cannabis has been known to man for at least 8,000 years? Or that the Chinese were familiar with marijuana's medicinal qualities 5,000 years ago? Fashion mavens probably don't know that the first jeans were made from hemp (cannabis) canvas sail material, and I'll bet very few health food experts are aware that there's good value in a cannabis seed.

These are just a few facts I discovered about the noble weed when I visited the Hash Info Museum in Amsterdam last May. The Museum opened informally December 23, 1986. It operated quietly until its official opening April 3rd. Curated by HIGH TIMES own Ed Rosenthal, the Hash Info Museum did a massive press mailing for the opening party in April. On April 4th, the shit, so to speak, hit the fan. Upset by the immediate publicity the new Museum attracted in newspapers throughout Europe, Amsterdam's boys in blue shut down the Museum the day after.

The Museum opened quietly five hours later. Unfortunately, the most impressive displays in the Hash Info Museum were confiscated by the Amsterdam police. From December 1986 to April 4th, visitors viewed incredible samples of hashish and cannabis from around the world. Under glass were gigantic chunks of Lebanese Red, Moroccan Blond, Afghan Black, Thai sticks and other exotic smokable substances. During that period, the Museum averaged close to 100 visitors a day with the police taking little notice of the establishment.

continued over

DRUG CHARGES IN RACIST SMEARS (Page 21)

THE AMAZING, INCREDIBLE YOGIC FLYERS! (Page 24)



NEW YORK SUCKS!

CREEPING FASCISM is rearing its ugly head in New York State, home of front-running Democratic candidate Mario "The Magnificent" Cuomo. On March 5, Cuomo proposed legislation to establish military-style "boot camps" for young, non-violent drug abuse offenders. Inmates would be subject to a six-month "paramilitary regime" of rigorous physical training, intensive regimentation, discipline, and drug counseling.

continued over

DRUG CHARGES SMEAR BLACK POLS

by Amzi Stokes

A BITTER DOMESTIC DISPUTE involving one of the South's most prominent black leaders has exploded into a scandal that threatens to destroy the careers of a generation of nationally influential black politicians.

Although a federal grand jury recently decided that there was insufficient evidence to prosecute Atlanta Mayor Andrew Young on charges of obstructing an investigation into alleged drug use involving former State Senator Julian Bond and other prominent Atlanta political figures, a cloud of rumor continues to hover over the black leadership of the South's most progressive city. The incidents of the last few months have "virtually slaughtered black reputations built up over a lifetime," said Dr. Charles H. King, who heads the Atlanta Urban Crisis Center.

Young, formerly an aide to the late Martin Luther King and Ambassador to the United Nations under President Carter, had made what he called a brief, "pastoral" telephone call to a long-time friend, Mrs. Alice Bond, wife of the former Senator, to counsel her. Mrs. Bond, distraught over a domestic quarrel with her husband, had told narcotics detectives that Mr. Bond was a habitual cocaine abuser, and also named other prominent

ATLANTA, GEORGIA

Atlanta as drug users. Mrs. Bond later retracted the charges, saying that they were the result of mental stress due to her marital difficulties. Young's phone call to her had started rumors that he was trying to intimidate Mrs. Bond into silence. But Young claimed that he was only exercising a duty of friendship. The grand jury agreed, and refused to indict Young.

Both Young and Bond, who is now the current president of the NAACP in Atlanta, denied charges that they used cocaine. Neither has been officially charged with any crime. Bond's trial by innuendo actually began last fall when, in a campaign for a seat in the US Congress, he was challenged by his opponent to take a drug test; Bond refused on the grounds of invasion of privacy, but the gossip began.

The continuing charges and counter-charges, fueled by unsubstantiated claims, have seriously hurt the reputation for upright morality which the Atlanta black leadership

has enjoyed since the early days of civil rights, an era in which many of today's politicians first rose to public attention. Some black public figures have speculated that the federal investigation was politically motivated, and that a sensationalistic press and a handful of disgruntled police officials had overreacted to a private, domestic dispute to exploit an opportunity to damage a prominent group of black Democrats.

In a similar incident, Washington, D.C.'s black mayor Marion Barry was accused by an alleged former lover of buying cocaine from her on "20 to 30" occasions from 1980 to 1982. Karen Johnson, a former city employee and a convicted cocaine dealer, also claimed that she and Barry had gotten stoned together "often."

The charges were made during a secret meeting between Johnson and federal prosecutors, and were made public by WUSA-TV.

Mayor Barry, who is married, denied the allegations, saying that he was "appalled and outraged at the conduct of the US attorney's office in leaking information. We're convinced this is part of character and political assassination to try to break my spirit and run me out of office." ●

NEW YORK SUCKS!

continued from previous page

"This program is designed to instill a sense of maturity, responsibility, and self-esteem in young drug offenders," the Magnificent One told the *New York Daily News*. "Those are qualities and values that could keep them from renewing drug abuse habits upon release. (No word from Mario on exactly what effect waking up to find out they live in a police state would have on the impressionable youngsters, though.)

In other Empire State news, the New York State Sheriff's Association proposed that stocks and pillories, devices for locking an individual's neck and arms into a wooden frame that have been out of use since the 19th century, be brought back as punishment for minor crimes. A weak sign displayed in a pillory in the World Trade Center concourse or in some town square should be more appropriate and effective than a year in jail for such things as casual alcohol-related offenses, minor white-collar crimes, and breaches of the public trust, read a formal statement the Association released. It further said that county jails throughout New York were faced with "impending disaster" because of overcrowding. Fascist dictator Guevara also warned that state prisons face major crowding problems and that new jails would have to be built.

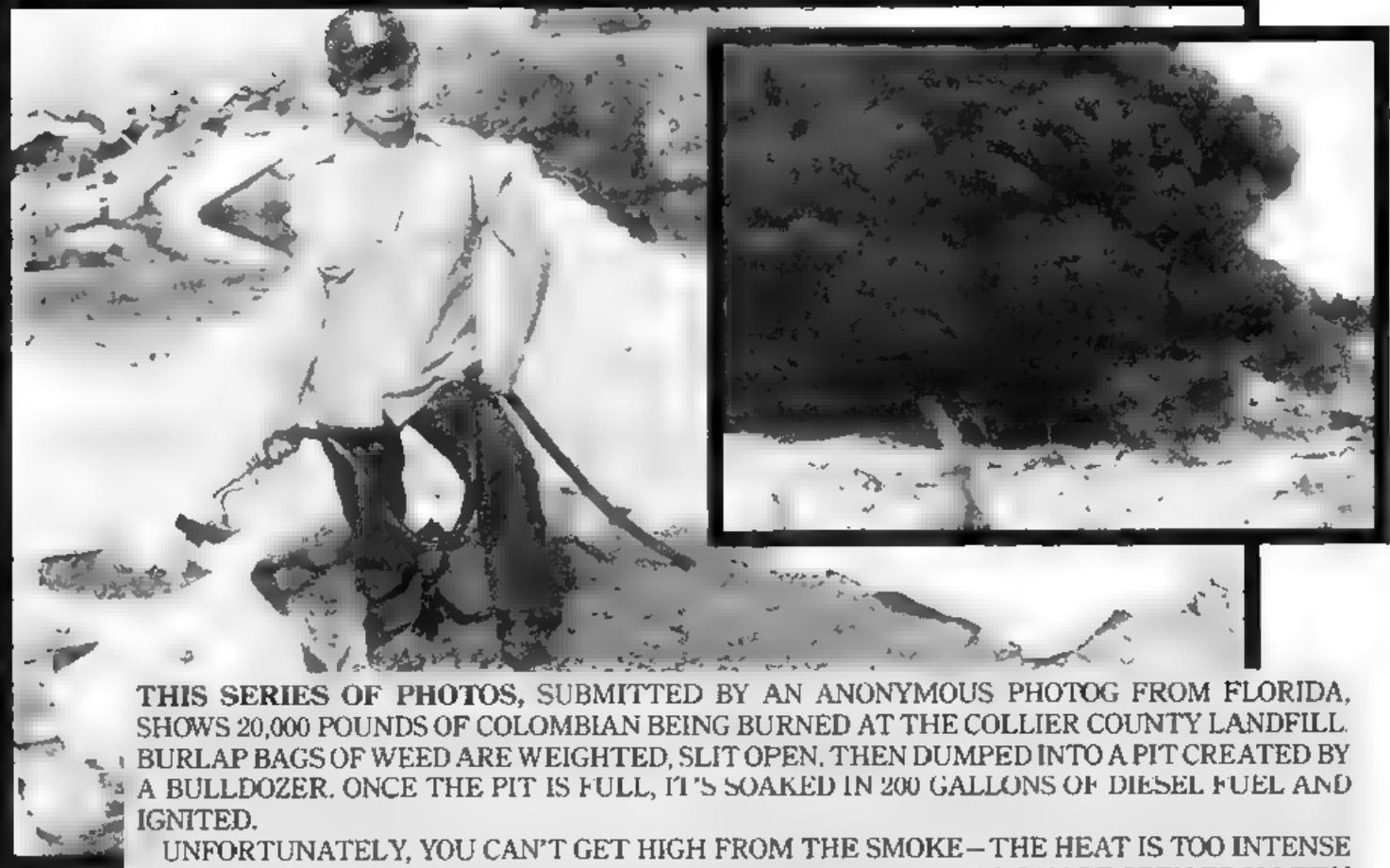
We have a nutty, crazy idea for solving the problem, but these idiots probably won't consider it: Legalize marijuana! That would not only free up the jails, but allow police to investigate real criminals! ●

continued from previous page However, the publicity surrounding the Museum's official opening was not welcomed by city officials. During the raid, the police confiscated all the cannabis and hashish samples and most of the displays that described smuggling methods known to customs officials around the world.

Even with almost a third of their display material missing, the Hash Info Museum still provides an incredible assortment of information and artifacts relating to cannabis culture. One odd condition of the reopening was that the word "Hash" be removed from the sign above the entrance and all advertising regarding this location. Thus, the Hash Info Museum's sign now says simply Info Museum, while a marijuana leaf is emblazoned where the word "Hash" once beckoned the public.

While in Amsterdam last May, almost every person I asked for directions to the Museum thought it was closed for good. I finally got the exact address (O.Z. Achterburgwal 148, phone (020) 235961) from a friend, and discovered that the Museum was open six days a week from 10 am to 6 pm. The admission price is four guilders (about \$2.00), and souvenir T-shirts, posters, and postcards are on sale.

BURN, BABY, BURN!



THIS SERIES OF PHOTOS, SUBMITTED BY AN ANONYMOUS PHOTOG FROM FLORIDA, SHOWS 20,000 POUNDS OF COLOMBIAN BEING BURNED AT THE COLLIER COUNTY LANDFILL. BURLAP BAGS OF WEED ARE WEIGHTED, SLIT OPEN, THEN DUMPED INTO A PIT CREATED BY A BULLDOZER. ONCE THE PIT IS FULL, IT'S SOAKED IN 200 GALLONS OF DIESEL FUEL AND IGNITED.

UNFORTUNATELY, YOU CAN'T GET HIGH FROM THE SMOKE—THE HEAT IS TOO INTENSE TO GET CLOSER THAN 100 FEET BUT THAT BEAUTIFUL SMOKE CAN BE SEEN FROM TEN MILES AWAY!

WHAT A WASTE OF GOOD SMOKE, EH? ●

The Hash Info Museum, according to the press release, "was founded to give people (smokers and non-smokers alike) an insight into the world of Cannabis." No pot is sold at the Museum. It has no desire to compete with over 200 coffeeshops in Amsterdam that already sell hash, pot, and "space cakes" (tasty hash cakes that cost about \$2.50 and give your sweet tooth an incredible buzz).

Many people think that hash and marijuana are legalized substances in Holland. This is not technically true. The authorities have classified hashish and cannabis as "soft drugs" in the same category as tobacco and alcohol. They recognize an individual's right to use these substances as long as they are purchased in the recognized coffeeshops in small quantities. Street dealing and importing of hash and grass are strictly verboten.

Amsterdam has a serious heroin problem. Junk is easy to buy and relatively cheap, so junkies from all over Europe flock to the city for the addictive white powder. Dutch officials state that the hard drug problem in Amsterdam is becoming stabilized among an aging group of about 8,000 addicts. There are more than 15,000 addicts nationally, and 50 other commununi-

ties have introduced methadone maintenance programs to ease withdrawal from heroin, in part because Amsterdam is trying to decentralize the problem and send addicts back home.

The city has closed 90 hash cafes in the past two years for violating the Public Prosecutor's "expediency rule" by refusing to keep a low profile and avoid the sale of hard drugs. Officials believe that the cafe experience does not invite wider use of soft drugs or evolve into experimentation with harder drugs in general.

The Hash Info Museum hopes to help the public better understand what it's all about, enabling them to understand the enlightened attitude of the Dutch towards the personal use of cannabis. It offers a continuous slide and video program that documents the complete cannabis cultivation process. An extensive display of dope related posters and T-shirts are handsomely displayed, as are badges and pot smoking paraphernalia. A wide variety of obscure, popular, and gimmicky smoking papers (such as the Camouflage papers, which help disguise your joint to resemble a Camel cigarette) is indicative of the overall attention to detail Ed Rosenthal exercised in putting together the Museum.

One of the most fascinating displays inside the small, neat studio that houses the Museum is a collection of 29 labels and stickers used by American pot growers. Reminiscent of the gorgeous orange-crates artwork that flourished in the '30s and '40s, the labels housed in a glass case include "Sticky Fingers Brand," "Muy Blastido (The Uncommon Sinse)," "Super Skunk," "Space City (Buds From Space)," "Beaver Brand (Dam Good)," and "Bogey Brand," sporting a moody black & white photo of Humphrey Bogart with a cigarette (or a joint?) dangling from his lips.

A museum official told me they are hoping to win a court case to reinstall some (and hopefully all) of their original displays. Meanwhile, the Museum is trying to keep a low profile in the world press to discourage further pressure from Dutch officials to shut them down for good.

"Everyone already knows that Amsterdam is a city where hash and marijuana use are tolerated when bought in coffee-houses," an anonymous policeman told me. "The government just doesn't want a museum making them a cultural attraction." ●

OYSTER JOE

I KNOW it's not a real sport but it's refreshing — more as big a fan as was a few years ago but whenever I wake up on a Saturday morning I catch a few body slams. So you can kick out of Hackawaw Duggan and the Iron Sheik getting busted.

I'm sure the irony of the situation was lost on you if you haven't been watching the WWF (World Wrestling Federation) lately. See, Hackawaw was this fan-in-the-street guy who carried a big two-by-four, like Billy Jack and started fighting with the Russian. He'd lead the crowd — like the Iron Sheik — and Nikolai Volkoff says, "he HUSS and a natural born them. On Memorial Day weekend after Duggan soundly defeated the Iron Sheik and the Russian, he led the teeming masses in God Bless America.

Hackawaw and the Sheik were stopped when a New Jersey state trooper noticed Duggan swigging beer while driving to Asbury Park on the way to a bout. The troopers smelled pot, then searched the car and discovered three joints. (Note: the Sheik's shaving kit and a can of pot. Duggan has. But don't worry, Duggan defeated the Iron Sheik, which means you can have the Sheik's head.) As a result, he and the two were immediately suspended, and the WWF cracked down on the other wrestlers.

If this is the quality of people who take drugs, it's no wonder that we're in danger of losing our rights. If those two characters — like every other self-respecting athlete — had been busted something to **NORML**, pot would have been legal ten years ago.

I don't really care about the WWF too much anymore, anyhow. I hooked on **GLOW**, the Gorgeous Ladies of Wrestling. Forget watching big, fat, ugly men grab each other and jump on top of each other and stick their faces in each other's jockstraps. I'd rather watch women do. The **GLOW** women in the most part have beautiful bodies — not skimpily dressed and are more athletic than the men. Not only that, but they're funnier. They stand up to the guys. The early comedy bits between hosts and the girls characterize the **Housewives** — who's had babies and the like — in a more serious, down-and-dirty vein. Not only that, but the girls' better instead of the boys' form. (Note: includes the WWF, **BLOW** beats us to Mount Fuji stomping on a Nazi flag, screaming, "Never again! Never again!"

Man, we deserved these guys who are, doing that. And it's not only. For instance, in the Sporting News, it's been the **Unconscious Art Spander** (or, I mean that) **Candlestick Fans Lead [the] League in Obscenities**. (Note: the **Unconscious Art Spander** around the edge would like to see. My beat is that ends in Philly would lay claim to that title, as would my grandstand contacts in Detroit, Chicago, and New York.

Then **Tommy Lasorda** (the **Yankees**) in his **baseball history column** about what animals' candlestick fans are — and that it's you chappies in the United States. It's a day, are chased and to the U.S. throwing things at human beings. What gives them a right to throw things at ball players?"

Hey, pasta-puss! Don't tell me you never, ever suggested that a pitcher throw inside to a batter, huh? And a baseball fan, you know how you're more than a stand-up-thee. But that shows it's with losers like Lasorda. When their team plays badly, they pin the blame on anything handy.

There's here's the new restrictive beer policies that are, leading, are around the leagues. Hey what fun is a baseball game if you can't catch what you've got? You know, parks, not churches! Are these spoiled, selfish players so wonderfully talented that we're supposed to gape in wonderment at their athletic abilities? Hell no! I'd rather get looped and heckle those rich bastards whenever they screw up! That's what baseball is for! I can't hold it at my boss at work, so I take out my frustrations at the park! It's the cry of the fan: "I pay these guys salary with my ticket, and I can say whatever I want to 'em!"

It's bad enough that it's harder to buy pot at the ballpark these days, but now those yuppie bevyachers are crying out in the family bleachers when they're watching what's worse than baseball? — An 'eve buy beer in the stands? Would you believe it? The five California parks, plus Fenway and Tiger Stadium, are the worst. They only sell low-alcohol beer. And the trendy thing for parks now is to suspend all beer sales after the seventh inning. It's enough to make you quit going to the ballpark!

I'm just glad there are still stadiums left where you can get as loose as you want, like Three Rivers in Pittsburgh, Busch Stadium in St. Louis, Houston's Astrodome, Olympic Stadium in Montreal, and Cleveland's Municipal Stadium. These great ballparks don't have any restrictions as far as beer sales go.

I read a good one the other day — Phil Musnick of the New York Post — and it's mandatory dope testing for TV announcers, and I couldn't agree more. Sports announcers should be hired for their sports savvy not their good looks. Musnick told a story about a TV sportscaster from Atlanta who watched a player get thrown out stealing, then asked if the player who was being during the steal attempt was allowed to bat again in the next inning. Ridiculous right? (Note: this story is a x-rayed the motors who end up in the media. I think mandatory dope testing of announcers would be great! Let's get rid of the dopers!)

The story of Michael Ray Richardson, who's been banned from the NBA, is sad. He indeed, he was kicked off the New Jersey Nets' team, and he's getting the same new he was having when he was playing. But he need ed to be a **baseball player** and he did. When Michael Ray did, he got the **baseball** he reportedly had Richardson buy some crack for experiments! The NBA has **baseball** to his statements as un substantiated, and still won't let him play. You have to hand it to Richardson. He played for peanuts in the USL, to prove that he was clean and deserves a second chance.

Now, this is getting in here. I don't know who's doing what drug policies. Rumors are rife that the Oakland A's knew that Vida Blue was doing the last year and did nothing. Same with the Mets and Dwight Gooden. Last year, isn't there a possibility that the Mets **had** doctors drug 'em? After all, Dwight seemed to think he'd pass. And, dig this — Mary Albert, sportscaster extraordinaire, is standing behind his report, first learned by Cindy Adams of the New York Post that the Mets **had** a drug problem. And, I'm sources for the **unconscious** that **it's** a **fact**. Apparently the Mets for whatever reasons are prepared to come forward with the admission of what players are doing to the 'em, Adams report. They know you just have to wonder about those fools who think a player should undergo mandatory tests. Would you want you're in the hands of those idiot baseball owners?

And, what about Babe Ruth had to undergo tests for alcohol abuse during alcohol prohibition? Or Hank Aaron? Mickey Mantle, Whitey Ford, and Billy Martin? What? They have been — and still are — tested for alcohol abuse? What? They passed tests baseball players today and suspended them for drinking? There'd be nobody left to play ball!

DID BEER DO IT?

AMAZING CLAIM:
BEER CIVILIZED
MANKIND!

A RECENT REPORT in the **NEW YORK TIMES** gave credible evidence to a theory that beer-brewing was the reason early man changed from a hunter/good-gathering culture to a literate, city-dwelling society.

Doctor Solomon Katz, an anthropologist at the University of Pennsylvania, wrote an article for **EXPEDITION** magazine that said, "almost invariably, individuals and societies appear to invest enormous amounts of efforts and even risk" in the pursuit of mind-altering foods and beverages. The combination of mood-altering and nutritional properties would have been enough incentive for hunter-gatherers in the Near East to settle down and cultivate grains for fermentation. Although there's no direct evidence that beer-making caused ancient Sumerians to cultivate grains, the theory solves one archaeological puzzle — at early neolithic sites, where stone tools used for cultivation were found, few burned grain seeds could be found, indicating that they didn't raise grain for the baking of bread. Grain used for beer brewing doesn't need to be exposed to fire. What's more, narrow-necked pottery, used to brew beer, are universally prevalent, even plentiful in early neolithic villages.

By the time the early Sumerian city-states evolved into the earliest civilization known to man, beer-drinking had been raised to a high status. In fact, the world's oldest recipe, written on Sumerian tablets, is for beer, and another tablet contains a hymn to the beer goddess, Ninkasi.

There's no evidence yet that neolithic man was also interested in cultivating marijuana for the same reasons, but give those archeologists a little time, and they'll put two and two together. ☀

GO GO GIRL OF THE MONTH



MOVIE STAR NEWS

"I GAVE MY YOUTH and beauty to men; I'm now giving my wisdom and fortune to animals," says **BRIGITTE BARDOT**, one of the century's most famous sex symbols. She recently auctioned 116 of her most personal possessions to raise money in her fight for animal rights. Memorabilia like her make-up, engagement rings, and the wedding gown she wore when she married filmmaker Roger Vadim in 1952, raised \$580,000 for the Brigitte Bardot Foundation for the Protection of Animals. Bardot and other ex-Mrs. Vadims (such as Jane Fonda) have demystified the sex symbol roles created for them by their former husband, revealing the mental cruelty incurred by being the number-one cash prop in Vadim's films. Yet many women who were schoolgirls at the time, remember her fondly as a liberator from the stifling mindset of the '50s, when nuns all over America scratched their heads in puzzlement as more and more young Catholic girls "inexplicably" took St. Brigitte for their confirmation names.

PHYSICIAN, HEAL THYSELF

—Dr. Karl Gallegos, of the Illinois Medical Association, reported that one in five doctors abuse drugs or alcohol, and that more than a third of them shoot narcotics. There are 300,000 doctors in the United States. "Before 1981, we saw no cocaine in this population and now cocaine is abused by nearly one in three impaired doctors. Obviously, they have access to needles and they know how to use them," Gallegos told the United Press Syndicate. The rate of intravenous drug administration was reported in 38.9% of addicted DOCTORS, which is FOUR TIMES the rate among drug abusers. Kind of makes you wonder if "education about drug abuse" is the best way to stop hard drug abuse.

HOW NICE OF THEM!—The Corrections Department in Richmond, Virginia, installed air-conditioning in the state penitentiary's death chamber to make it "more comfortable for everyone," according to a story in the **RICHMOND TIMES-DISPATCH**. It was installed in the electrocution death chamber as well as the execution holding cells. **WOMEN'S VID LIB**—According to a report in the **NEW YORK DAILY NEWS**, women account for half of the 100 million X-rated video rentals a year, and are taking a bigger role in producing and directing porno as well. "Some men touch you, you think they're trying to operate a crane shaft," a \$300-an-hour call girl told the **NEWS**. "It's what they've learned from the old porn movies. Men need better instruction."

BIG MAC ATTACKS THE OZONE—Senator Robert Stafford, a Republican in Vermont who is one of the Senate's premier environmentalists, has charged that McDonald's packaging contains CFCs (chlorofluorocarbons), which attack the stratospheric ozone layer that shields life on earth from damaging ultraviolet rays. "If you buy food from McDonald's, the chances are 50-50 that it will include CFCs," Stafford said in a letter to the fast food empire.

PEYOTE RULING—Frances Warner, a former drug counselor who was fired for using peyote in religious ceremonies, won the right to seek damages against four state officials in a lawsuit totalling \$1 million. Warner is a member of the Native American Church, which has congressional sanction to use peyote in rituals.

BOW-WOW!!—An 80-year-old man suffered minor injuries after being hit by a flying dog. The dog, after being hit by a passing car, flew up in the air and knocked Elmer Searle, a retired car salesman from Largo, Florida, unconscious. "It was a real shock, that's for sure," the stunned Elmer said afterwards. The dog, unfortunately, didn't survive the accident.

SAVE THE LIVERS—A food supplement that protects the liver against the effects of alcohol consumption and protects against cirrhosis of the liver, toxic liver damage, and chronic hepatitis is now being marketed in the U.S. The product, called Lyverine, contains an active plant ingredient called silymarin, an extract of the milk thistle fruit, with inositol, a desiccated liver derivative, in whey base. Liver diseases are the third leading cause of death in the U.S. for persons aged 25-59. Currently, there is no widely available treatment for those diseases.

DIAL AN ANARCHIST!—Just ring up (608) 244-3641. They'll tell you a little bit about the theories and issues of anarchism, and give you some info on how to find out more about it.

BOGUS HENDRIX DISCS—Former Jimi Hendrix manager Eddie Chaipin won permission to seek damages against a company that sold eight records that featured a bad imitator. So, if you bought "Rare Hendrix," "The Genius of Hendrix," "Cosmic Turnaround," "Free Spirit," "Kaleidoscope," "16 Great Songs," "Moods," or "Roots of Hendrix," you can throw them away. They're not by Jimi.

WHAT'S UP DOC?

A doctor responsible for drug tests on employees pleaded guilty to faking piss-test results because he didn't have the equipment to conduct the tests. Doctor Delbert Lacefield, 52, supervisor of the Forensic Toxicology Research Unit of the Civil Aeromedical Institute of the Federal Aviation Administration, admitted providing false negative results on three blood plasma tests for recent drug use in three accidents in 1986, even though he never conducted the tests. The tests involved employees involved in three railroad accidents—one in Nebraska in which a person died, another in Ohio that seriously injured a person, and a third in New Mexico that caused property damage. After the Ohio accident, officials said traces of marijuana were found in the systems of the Conrail engineer and the brakeman. Dr. Lacefield faces up to 15 years in prison for faking the results. ●

FREAK LIGHTNING FIRES WALLOPS ROCKET

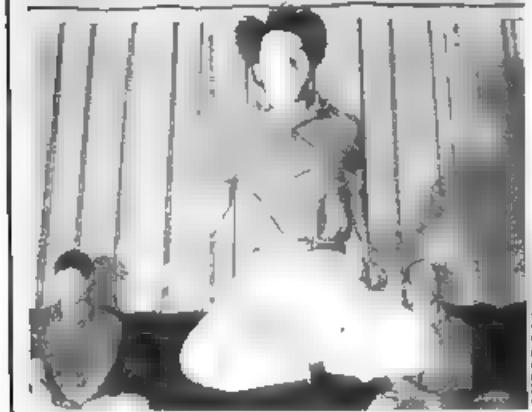
**NASA SHOCKED,
NUKES "PROBABLY" SAFE**

THREE SMALL ROCKETS were accidentally launched in a thunderstorm when lightning struck a NASA launching station at Wallops Island, Virginia. The storm also knocked the nation's prime weather satellites out of whack for several hours, wiping out TV satellite weather forecasts.

Lightning bolts struck near the launching pad, causing surges of electricity in the cables to trigger ignition in the rockets. "We do not have a complete understanding of the mechanism which caused the lightning to set it off," John Parks, range safety officer at the Wallops Flight Facility told the Associated Press. NASA officials insist that lightning would be unable to launch either the space shuttle or unmanned rockets at the Kennedy Space Center. ●

The Incredible FLYING YOGIS!!!

PROGRAM TO CREATE



ANDRE GROSSMANN

YOU'VE GOT TO HAND IT TO THE MAHARISHI MAHESH YOGI. Twenty years ago, he managed to rope the Beatles, who were "bigger than Jesus" at the time, into promoting transcendental meditation. Today, fully cognizant of the '60s revival that's going on, he's staging yet another outrageous publicity gimmick: *Yogic Flying!*

Here's the deal—the Maharishi stages a demonstration of the yogic flying "technology" and invites the media over for a demonstration. First, he has "experts" from virtually every field of human endeavor testify that this form of TM will "create coherence in world consciousness, the basis of world peace." Then the "flying" begins.

Six guys sit in a lotus position on mattresses, meditate for around ten minutes, and, on cue from a spokesman, hop across the mattresses, using their arms for balance. In a still photograph, this gives the illusion that the guy is flying.

No matter. The demonstration did what it was supposed to do. It got the word out on transcendental meditation, a really healthy discipline. If the Maharishi wants to promote it as a means to world peace, **HIGH TIMES** is behind him one thousand percent.

To learn more about the Maharishi's plan for world peace, write to: Maharishi World Peace Fund, 3000 14th Street NW, Washington, D.C. 20011. Even if it can't solve the problems of world peace (and who are we to say it can't?), the individual practice of TM reduces stress, enables one to focus their thoughts, and, judging from the smiles on the "flyers," feels pretty damn good! Hey, what the heck—any plan for world peace is better than none, right? ●

POT: U.S. #1 \$ CROP

NORML REPORT CREDITS REAGAN
FOR U.S. SELF-SUFFICIENCY
IN POT PRODUCTION

WASHINGTON, D.C.

MARIJUANA grown in the US was the number one cash crop in the country in 1986, worth an estimated \$26.7 billion, according to a report released by the National Organization for the Reform of Marijuana Laws. That estimated value would make last year's pot crop more than twice as valuable as corn, which brought farmers \$10.9 billion.

NORML's annual crop report, this year for the first time based primarily on the federal government's own documents, outlines the ironic "success" of efforts by the Reagan Administration to drive up the price of marijuana by suppressing its production and use: With high-quality, California-grown sinsemilla selling for up to \$5000 a pound, the government-supported high prices have served as an incentive for increased marijuana production all across America, by commercial and personal-use growers alike.

NORML estimates that over 250,000 commercial and two million personal-use marijuana farmers grew 13.5 million pounds of marijuana last year in the US, about 50 percent of the estimated 27 million pounds consumed by the nation's marijuana consumers. Two-thirds of this crop was sinsemilla, with an average value of \$2500 per pound; the remainder of the crop, of numerous varieties, had an average value of \$1000 a pound.

Jon Gettman, NORML's National Director, estimates that if all 27 million pounds of marijuana consumed in 1986 were legally grown, it would provide \$10 billion to farmers, and \$16 billion in tax revenue to state and federal governments. In the report, Gettman also noted that many marijuana smokers mislead government survey interviewers about their marijuana use. NORML now believes that over 42 million Americans use marijuana regularly; official government figures range from 18 to 20 million.

This report also contains figures for marijuana production on a state-by-state basis (marijuana is grown in all 50 states and in the District of Columbia, despite the fact that it is an illegal activity.) California again ranks number one, with a crop worth an estimated \$3 billion, followed by Hawaii, Oregon, Kentucky, and North Carolina, each of which produces over a billion dollars worth of pot.

The full 32 page report, *Marijuana In America* 1986, is available from NORML, 2001 S St. NW, Suite 640, Washington, D.C. 20009. ●

BOOM! RAT-A-TAT! E-GLAM!

THE VIEW FROM THE FOXHOLE

by the

Phantom Bomber

YEAH, THERE'S A WAR ON DRUGS ALL RIGHT I sure know that. Enough of my friends are prisoners of that war that I feel like getting a god-dam guerrilla group together to get them free, you know? Reagan should get wise to basic military strategy — you can't fight a war on two fronts. Reagan should make a choice between fighting commies and drugs. 'Cause he's losing two wars.

Personally, if I was Reagan, I'd quit both conflicts while I was ahead. But you know what's scary? From the looks of things, there are more politicians out to fight drugs than communism! Man, it's like WE are now public enemies number one, just because we like to light up a joint! It's fuckin' sick!

I've been talking to my friends about this stuff, and I think maybe I'm on to something. The same cocksuckers in the government who want to wage war on drugs are putting up those roadblocks to check for drunk drivers, passing laws that say you can be arrested for not wearing a fucking seat belt and crying out for mandatory tests for AIDS and drugs. In other words, they're out to destroy every single freedom we have. The sickest thing is, they're getting away with it! We're letting them get away with murder! As long as these fascist do-goodniks pass laws that treat the general public like a bunch of morons who can't even fasten a seat belt without a law telling us that we have to, we're all fucked. Then we're all gonna be living in a big high school.

You know, the big joke around the HIGH TIMES office is that everyone thinks we went out of business years ago. These creeps think they've won the war against drugs. They read the statistics that say that kids are all yuppies who drink and don't smoke pot anymore, and then they look for the next place to screw up our lives. So they go after cigarette smoking, which they claim is so bad that it will kill you if you're in the same room with a cigarette smoker. I know a lot of you readers dislike tobacco smoke, but think about it. Pot will NEVER become legal if they make tobacco taboo! We smokers gotta stick together!

What it all comes down to is one thing, repression of our basic civil liberties. It's no coincidence that racism has made a big comeback during this age of repression. Or that people seem too afraid or helpless to do anything about it, so things are getting progressively worse as a result.

The thing is, you CAN do something about all the bullshit. There's a national election coming up. It's time to vote again. Only this time, it's obvious that the two-party system is fucked. I don't see any candidates in either party I'd waste time voting for. And the two-party system has been used to repress us for too long.

It's time to take away that power base. This year, vote third party. Any third party. Vote Libertarian. Populist. Communist. Right-to-life. Yippie. Socialist. Anything but Democrat or Republican.

Don't write in your vote. The League of Women Voters might destroy it (they should be investigated). Register to vote under a third party, then vote for a third party.

Only 20 percent of the country votes, so if enough of us show that we're fed up with the two-party system, it could make a difference.

There's a fourth network now, so why not a third and fourth party? ●

TRANS-HIGH QUOTATIONS MARKET

MAJOR MARKETS

Atlanta, GA	Good Jamaican Fair sinsemilla. "the usual"	1/4-oz 1/4-oz	45-50 35
	Different shit all mixed together, brown & green, "pretty good"	1/4-oz	35
	Shrooms when available	1/4-oz	35
	Acid, different kinds, "fun & clean"	1/4-oz	5
	Cocaine, "the usual stuff" (the usual price)	gm	50-100
	Crack, "fuck that shit, it's killing people!"		

Chicago, IL	Mexican Red. Green, tight buds few seeds straight from the brick	1/4-oz 1/4-lb	30 400
	Red-haired sinsemilla, "real, thing finally"	1/4-oz 1/4-lb	40 350-400
	Green Mexican nice buds, does the job well"	1/4-oz 1/4-lb	35 300
	Shrooms, "they were plentiful"	gm	8
	LSD pink blue microdots, where's the real good acid?"	one	5
	Coke 70%-80%, nice rocks	gm	80
		3-4 grams	220

Los Angeles, CA	Hawaiian "tuck" one "very potent" 3 very druggy 6 Oregon Green, "for those who want something strong, but not super strong"	one 3 6-oz 1/4-oz 6-oz oz	60 175 350 75 150 300
	Mexican <i>radica</i> , "heavy lucia punch at an affordable price"	1/4-oz 1/4-lb	115 230 500 1800
	Mexican Jewel con densest, street level "cheapo, a good buzz at base price"	1/4-oz oz	30 120

Marin County, CA	Hydroponic <i>indica-sativa</i> hybrid	oz	240
	Hydroponic <i>sativa</i> , passion fruit scented, blows your mind, extremely scarce	oz	150
	Mexican shitweed, "seedly, but good high"	oz	125
	Magic mushrooms, extremely potent, mind-shattering, 6-inch stems, "all most dangerous"	gm oz 1/4-lb	2 70 200
	LSD-25, pure green heart & blotter "always around"	hit 100	2 65
	XTC, very pure gel capsules	hit gm	4 70
	Cocaine small rocks	gm	60
		8-ball	200

New York, NY	Thai, "good moist, brown Mexican, green with red hair" Kentucky <i>radica</i> , Pressed black <i>lambanog</i> , "with coke syrup & hot pressed	oz oz oz oz	220-250 250-300 200-220

Prices current as of June 15, 1987.
Send quotations to: THMQ,
211 E. 43rd St., New York, NY 10017.
THMQ is intended solely for informational purposes.

AROUND THE U.S.

Albuquerque, NM	<i>Indica</i> , "The Rad. one-hit shit" Thai, "radica, "serious body buzz"	oz 1/4-lb	150-200 600 150-190
	Mexican- <i>indica</i> , "purple haze"	oz	150-190
	Mountain skunk, "fruity taste good high"	oz	135-165
	Mushrooms, fresh, "snapping"	oz	20
	Acid, paper blotter "devastating"	lb	3-6

Alton, ME	<i>Indica-sativa</i> hybrids, 20 selections Sativa- <i>indica</i> hybrids, 10 selections Pure <i>indica</i> strains, 10 selections Jamaican Lamb Tam, "on board the hardly legal 13th anniversary run"	lb	1300-1700 1300-1700 1300-1700 900-1300
	Panama Red bud, "kicking ass all down the coast"	lb	900-1300
	Colombian Red bud, "good bud"	lb	650-850
	Thai "Strain Gold, dreamland"	lb	1700-1850
	NORML, "Special bud, "funding the resistance and the national cause"	lb	donation
	Hawaiian <i>Pure sativa</i> , very rich & spicy & very cerebral	lb	2000-3000

Anchorage, AK	Brown weed, stemmy & seedly, always around Hawaiian small pine smell bud "great high"	1/4-oz 1/4-lb	45-55 80-110 1300-1600 60 120 900-1800
	Thai bud, "smoke & choke"	1/4-oz 1/4-lb	75 650-800
	Purple Fat Bud <i>indica</i> , "always grown here indoors, narcotic high"	1/4-oz 1/4-lb	65-80 250 2500-3000
	Skunk originally Matanuka Thunder Fuck grown outside "death weed"	1/4-oz 1/4-lb	60-70 650-800

Ft. Myers, FL	Acid, "I've had better teenagers like it" Blow, "not good"	hit gm	5-7 250 120-150
Grand Junction, CO	Colombo Gold "good quality" Red-hair sunse "abundant" Afghan Black "you feel the THC slam the back of your throat on every pull"	1/4-oz lb	25 1000 35 1250 200
Lafayette, LA	Jamaican buds, "brown in color makes you where you can't move, no shit"	oz lb	120 1600
Little Rock, AR	Local adoor indica, "I swear this tastes and smells like an orange, fantastic high" Shrooms, "very nice & plentiful, dried" Sea-Weed, "pulled out of the Gulf ough Shrooms fresh Shroom juice, "plentiful & potent"	1/4-oz gm oz oz gal	75 3-5 100 30 25
Mansfield, IL	Acid, Black Pyramids, "just arrived from Texas, thanks guys"	ea 100	5 200
	Good green sunse Mellow Mexican, "cool high" Brown shake "bottom of the bag, but adequate"	1/4-oz 1/4-oz 4-oz	40 30 20
	Shrooms	gm 1/4-oz	7 35-40
	Red Bud, "good 5-lb lots" Brown Dirt, "Big M is stuck with it" Coke, "do not do shit like that, very bad for you"	lb lb - -	900 225 - -
	Good ole reliable marijuana Berkeley acid, "High school students, Real people" Cocaine, "why bother?" Ecstasy, "suddenly plentiful, will the price ever drop?" Jolt cola	1/4-oz hit 1/4-gm hit can	30 8-10 5 25 50
	KY indoor <i>sativa</i> killer, "super gummy" Texas sunse, "lots of hairs, not many seeds" Mexican sunse Local sunse deadly Acid, Dead Head white blotter	1/4-oz oz 1/4-lb 1/4-oz oz lb 1/4-oz 1/4-oz 1/4-lb 1/4-oz 1/4-lb 100	55 210 675 30 100 1100 40 35 380 4-5 250

Myrtle Beach, NC	Florida sunse, "good"	1/4-oz	35
	oz	130	
	1/4-lb	350	
	N.C. homegrown, "far"	1/4-oz	30
	oz	110	
	1/4-lb	275	
	Jamaican Float, "dry & trippy, good buzz"	1/4-oz	25
	oz	95	
	LSD Escobar picture on sheet	1/4-oz	2.5
	one	6	
	LSD Converse All Star "W VA origin"	6	30
	100	225	
	LSD Converse All Star "W VA origin"	one	5
	6	25	
	100	160	
Omaha, NE	Colombia (?) brown Sunse "average"	1/4-oz	25
	1/4-oz	30	
	Sunse "above" average	1/4-oz	35
	oz	125	
	LSD White Blotter real clean	hit	5
Paterson, NJ	Indica, purple, orange/red hairs, hydroponic "excellent weed"	gm	15-20
	Commercial dirt weed "2-4 joints to catch a buzz"	gm	10
	Hash, "better than indica black"	gm	10
	Shrooms first time in about a year, "very good"	oz	140
	1/8-oz	25	
	Mesc purple, "good"	3	10
	LSD, blotter "kickass," Grateful Dead, Album Covers, Prism, White or Green	ea	5
Portland, OR	Light and fluffy, minty buds	gm	8
	Golden hash, "my best"	oz	120-150
	LSU gels, 100 mcg	gm	4-6
	100 mcg	oz	100
	250 mcg	dose	3
	100-pac	70	
	dose	5	
	100-pac	120	
Springfield, MO	Weed, local, "need 1/4-oz. to get high"	1/4-oz	30
	oz	105	
	LSD Moon & Stars blotter, "clean, pleasurable, my favorite"	hit	2.7
Staten Island, NY	#58 brown/green Mexican, some seeds	oz	140
	1lb	300-1600	
	#57 green/red, Buff	oz	140
	Brown mix, "wouldn't smoke if you paid me"	1lb	1400-1600
	oz	45	
	Green mix, "everything but the kitchen sink"	1/4-oz	190
	oz	35	
	140		
Western MI	Brown, red-brown, commercial	1/4-oz	35
	oz	120	
	Ho-hum indica	1/4-oz	40
	oz	160	
	Calif Orange, "sweet taste"	1/4-oz	45
	oz	180	
	Shady Lady, "excellent connoisseur quality"	1/4-oz	50
	oz	200	
	Laos, "excellent flavor strong buzz"	1/4-oz	50
	oz	200	
	Marijuana drying up already!		
	Coke, "ho-hum"	gm	100
Wilkesbarre, PA	Green sunse, "seems to be a few kinds, short high, good taste"	1/4-oz	40-50
	oz	160-200	
	Indica buds, "very good taste very nice buzz, worth it"	1/4-oz	45-60
	oz	160-220	
	Regular green & brown buds, "shitty taste & old smelling"	1/4-oz	30-45
	oz	120-150	
	Northern Lights, "this shit is very potent, smells killer buzz lasts"	1/4-oz	55-70
	1/2-oz	110-120	
	oz	220-240	
	Acid, "stuff's very clean & goes 8-10 hours"	ea	4

TRANS HIGH MARKET ANALYSIS

LETTERS



OHIO

I have a quotation for central Ohio: The pot situation sucks! Right now there's nothing but some okay Mex sativa for about \$115 an ounce. There are no good indica buds around. The coke is excellent like always—\$90 a gram. I think people need to start growing their own plants and lowering the prices or central Ohio will be in sad shape! If you don't grow any, don't bitch!

Growin' my own
Central Ohio

FLORIDA

We would like to thank Ft. Myers for that primo skunk brought in. It was great. The ticket for it wasn't too bad: \$180 an ounce average. We're going to be taking some killer California and crossbreed it with the skunk. We're going to call it "Citrus Skunk." And now talk about "shrooms." They're here and, once more, they're free! All you have to do is wait for a rainy day. Who says rainy days aren't cool?

MAN

New Port Richey, Florida

PENNSYLVANIA

June 8th: Plants are 3-4 feet tall. Weather is excellent. Started with 90 plants, down to 20. I'll probably cut the final number down to 12 to 15 plants. The price of herb in our small town is very reasonable. We pay from \$25 to 35 for a quarter ounce, \$100 to \$125 an ounce. The herb is all primo bud, and we have lots of different kinds to pick from.

MAN

Southwestern Pennsylvania

TEXAS

I just read your June 1987 issue and was somewhat surprised. It had been a couple of months since I had read a copy of HIGH TIMES because it's not easy to put your hands on a copy here. But I could not beieve the "THMQ" entry for Houston, TX that you had. We have so many drugs here. I am paying \$1000 an ounce for first-rate coke, about 75% to 80%. What more could a person ask for?

Cokeman
Pasadena, Texas

ATTENTION OUTDOOR GROWERS!

HIGH TIMES is preparing its annual harvest issue. But we need your help. Please send a progress report on your crop. Write a brief note and send it to HARVEST REPORT, HIGH TIMES, 211 East 43rd Street, New York, NY 10017. Don't forget to sign your favorite pseudonym and please use a fake return address. We'll run as many letters as we can.

THANKS.

—The Editors

NORML

Dissent: Disney Made Me Do It!

By JON GETTMAN,
NORML Director

USED TO WONDER why so many people would persist in flagrantly breaking the law by using and selling marijuana. In time I learned that it was, for many, a deliberate challenge to a corrupt policy. Marijuana is not the issue. Freedom is. It was inspiring to realize how many people were willing to risk their personal freedom in order to fight for the freedom for all. Where did this dedication come from?

It's our American heritage that is responsible, and its influence can be found anywhere. I found it first on the Disney Channel, mostly, but also in some old black-and-white movies. On account of my job, I am considered by many people to be something of a radical. Truth be told, though, I'm just another all-American kid who grew up watching *The Wonderful World of Disney* with his family on Sunday nights during the early '60s.

I learned about rebellion over three Sunday nights in February of 1964 from *Dr. Syn*, alias the Scarecrow. I was six and a half (I looked up the dates). Then, a few years back, I subscribed to the Disney Channel. After a while, I realized why so much of the material was familiar to me: I was raised on this stuff!

Walt Disney taught me the basic American myth that the honest citizen fights back when hassled by corrupt authorities, and even breaks the law if necessary. That's our story, and it always has a happy ending. When our fellow citizens understand that this is our story, marijuana prohibition will crumble away into the dustbin of history.

The Scarecrow was the head of a band of smugglers who worked in Romney Marsh, in the British Isles. To keep their identities secret, the Scarecrow and his two captains wore the masks of scarecrows, complete with hay sticking out from under their collars and a broom handle across the shoulder blades. Appearing only at night, they were a frightful sight, and their men served them loyally. The Scarecrow was really a latter-day Robin Hood, who sought to free the area from the corrupt officers of the Crown who were looting the local economy.

By day, the Scarecrow was the respected vicar of the church, Dr. Syn, who moved with ease among the gentry and lords. Once, one of his men was betrayed, and Dr. Syn successfully plotted to have him broken out of prison. They discovered who the traitor was, and the Scarecrow hanged him before all the men. After the men left, the traitor, having fainted before discovering his execution was just a show, was revived and advised to leave town. No doubt about it, the Scarecrow was really a good man. He epitomized a generation of rebels, who, like him, believed that "to live outside the law you must be honest."

And how about Davy Crockett, who, when hired to hunt down the savage Chief Red Stick, does so, but instead of killing him, wins his admiration and respect? Do you remember the "Z" that stands for Zorro, another outlaw who fought for truth and justice? The Disney collection of movies is built around versions of the classic American myth about rebellion against unjust authority. There is also Rob-Roy, the Highland Rogue, the Swamp Fox, and of course, countless proponents of rebellion for rebellion's sake like Peter Pan!

In some respects, the Disney Channel is the most revolutionary development of the decade because it brings the mantra of change to the children of America, rather than, say, war games.

A nation's mythology reveals the nature of its vital forces. Anyone who can tap those forces can accelerate change. Myths are as true as a society holds them to be. They are not subject to logic and science, they are repositories of values. Mythologist Joseph Campbell offers the observation that myths are beliefs that are actually lived by. This is the secret to nonviolent revolution. At its simplest, it's the power in the ideas that motivate massive demonstrations, such as those which brought independence to India or drove rulers such as Marcos and the Shah of Iran into exile. The leaders of those movements, like them or not, caused change to happen by using national values in an appeal to a nation's conscience.

No matter how much the guardians of the status quo try to use the mass media to enhance respect for authority, the most appealing myth to the American public is the principled defense of freedom in the face of oppressive government.

Interestingly, right after Prohibition, the government encouraged efforts to have cops portrayed in a more positive light, as "crime-busters" because most cop stories still projected the American myth of the innocent victimized by vicious authorities. Many of our favorite late-night movies belong to the tradition of film noir, a genre characterized by persistent themes of alienation, escape, and private obsession in reaction to fears of an oppressive society. Film noir includes such classics as *The Maltese Falcon*, *The Blue Dahlia*, *The Postman Always Rings Twice*, *D.O.A.*, and, one of my favorites, *I Am a Fugitive from a Chain Gang*. J. Edgar Hoover and Melvin Purvis of the FBI both attempted to influence Hollywood to portray their G-men as exciting national heroes, but the pull of popular, mythic tastes instead made heroes out of the gangsters!

One of the most blatantly political works of the Disney Studios is their animated cartoon of the story of *Chicken Little*. The fox is portrayed as a student of psychology and a demagogue who flatters Chicken Little and dupes him into discrediting the roosters, the leaders of the community, and then into leading all the chickens to the fox's cave to be safe from the falling sky—where they are all eaten by the fox. This was an anti-Nazi, anti-fascist piece of propaganda made in 1943. I doubt that Dylan had it on his mind when he wrote, "Don't follow leaders, watch your parking meters," but that pretty well sums up the moral of the story: Don't get emotional, think for yourself!

Satire requires its own language of understanding. So does social change. Politics, for example, is a social drama in which the language of myth is spoken. It is a language we are all familiar with but one we generally lack an awareness of. Reagan became President because of—and I think solely because of—his ability to speak that language. It is an impressive ability. Comments about the effect of the Iran-Contra Hearings on Reagan's standing with the public bears this out. Senator Wyche Fowler, Jr. (D-GA) has said that "People are programmed to be disappointed by politicians, but they thought [Reagan] was different. Their questions [now, about the Hearings] convey a betrayal of trust." Rep. Dave McCurdy (D-OK) suggested that the scandal "has punctured the myth of the Reagan Administration and

IZZER IZZER

The heroic All-American hero, Robin Hood, defeating the evil Sheriff of Nottingham in battle. Death to all fascist pigs! Robin Hood is best known today for stealing from the rich and giving to the poor. Ten centuries after his death, it's still a good idea.



MOVIE STAR NEWS

the Reagan term, people now question his policies and his advisors on a whole range of issues."

The Disney body of work is a cultural treasure familiar to many Americans, who spanning several generations. It is a shared point of reference. It is a comprehensive collection of national mythology. It is a reliable source for discovering the myths Americans choose to live by, in fact, its purpose is to instill these values in our children.

Americans do not understand, mythically, what is commendable about letting their kids hide by the barn, smoke some smelly weed, and get silly, lethargic, or otherwise interfere with honest work. This is how marijuana use is mythically misunderstood by non-marijuana users. To them it doesn't correspond with any familiar story they hold dear to heart. (If it has occurred to you that this is why some people tell such bizarre stories about marijuana use, then you're catching on.)

Americans do understand about corrupt authorities abusing their power to manipulate and

exploit innocent citizens. This is a fundamental mythical concept in American culture. New myths are created every year to justify arresting marijuana users, but they fail to take hold because of our basic resistance to abuses of power. However, new myths have a shelf life of a few years, especially if, as in the case of the High Priests of the parents' and antidrug movements, millions and millions of dollars are spent popularizing them. Eventually, the blind submission to authority of **Just Say No** is going to lock horns with the antiauthoritarianism of **Dr. Syn, Davy Crockett, Zorro, and Robin Hood**.

I think we will gain more credibility with the public if we express our grievances in terms they can understand. I've been collecting stories, in 1988 I'll begin publishing them extensively and demonstrating what I mean. We, the reformists, have the high ground. When we can express ourselves in familiar terms, that is, as good people wronged by a spiteful government, the majority of the public will support us.

In these columns I have tried to argue that we share the same values as the rest of America, and that because of this, we have the moral strength to succeed. But this is not enough. Just as we say, "Show us the actual human cases in which marijuana has caused genetic damage," others ask to see the actual human cases in which the laws have caused more harm than the drug. We'll win the battle because we have human evidence to back up our claims, and our opponents do not.

All of this, in a roundabout fashion, brings us to the topic of demonstrations. In a social revolution, any activity can be part of an ongoing demonstration. (In totalitarian revolutions, every activity is supposed to have revolutionary significance. The Disney theory says, "Lighten up.") There are a lot of activities that speak the familiar language of political mythology—passing out materials, writing letters, holding meetings and conferences, and other activities that demonstrate commitment to a cause.

And it is no accident that these activities are stressed over and over again to all **NORML** activists, and will continue to be. We must begin, though, to have public protest demonstrations—or else no one will take us seriously. There is a mythic formula in America for grievances against the corrupt authorities. You go public. In this way you revalidate the central myth of Americans being a good people upholding the individual against the corrupt state. If we're going to claim to be wronged by the government, and we are, then we have to play the part to its fullest. The public is sympathetic, but they're waiting to hear from us.

When we can produce more stories about marijuana laws hurting people than our opponents now produce about marijuana itself hurting people, marijuana will be legalized.

When we can produce more bodies in the streets in favor of marijuana reform than our opponents can produce in favor of arresting us all, marijuana will be legalized.

Social change, though, is something naturally pursued by freedom-loving people, and, in our society, it is preserved by our Constitution. No one has to listen to us, but no one can shut us up either. We're free to advance onto mythic battlefields and lock horns with adversity. We're also free to hide at home, and as my colleague **Burt Neal** writes in **Activist News**, learn to live with oppression instead. The choice is yours. I, for one, have already chosen the myths I intend to live by. I have no intention of living with marijuana prohibition.

And by the way, here is a special message for those dedicated people at the **Drug Enforcement Administration** and the **National Federation of Parents**: If you understand this column, then you know I'll be seeing you on Main Street. If you don't understand this column, go watch the **Scarecrow of Romney Marsh**. You must have missed something when you were a kid. ●

Drug Tests: Conformity = Legitimacy



BY BURT NEAL
NORML Assistant Director

"LEARNING TO LIVE with" drug testing means you're going to live with it a long time. The fact that more Americans are facing these tests is very similar to what we now face with marijuana prohibition. We have all learned how to live with marijuana's illegality; the little white lies to insurance companies, hiding the rolling papers, and not refuting blatant lies about marijuana users. Most of us get around prohibition with a minimum of inconvenience. And look where it has gotten us: over six million arrested, grossly inflated prices for pot, and the 50th anniversary of marijuana prohibition.

Ever since the practice of urine testing began, concerned people have been phoning NORML offices for more information. The only thing that they want to know is how to beat the tests. More often than not, they aren't even willing to receive a mailing packet from us containing further information on the tests. And those who do receive our urinalysis information packet are less likely to join than are those who have other information requests.

From our point of view, not enough

people are saying, "Hey, these tests are wrong, and I want to stop them!" All I'm hearing is "I need the info to save my ass this one time." That's it.

This is a sad example of the mess that we are all in. Instead of challenging the dictatorial nature of the testing, its victims submit to it by playing the game. I am not condemning anyone who undergoes urinalysis: It is an individual's decision to make. But the decision is all too often a result of coercion—the threat of unemployment. No, the sad part is that the person's involvement ends with that test. They do not fight it in any way, giving tacit approval to its practice and leaving open the gates to even more extensive testing in the future.

Anyone who has to undergo one of these tests can tell you just how degrading it is. Remember just what substance they are really asking for: urine. Even the logic behind the theory of random urine testing—guilty until proven innocent—is blatantly un-American. For the marijuana consumer, the discrimination is quite clear: We can't tell marijuana users apart from everyone else by dress, personality, intelligence, performance, politics, or religion. But we can identify you by checking your body tissues and their by-products. And if we are using a urine test, we are definitely looking for marijuana, not co-

ca. ne, heroin, or alcohol (more often located by blood tests).

And yet most people just want that vital information on how to beat the tests. Then they take the test and breathe a sigh of relief when informed that they have passed. . . this time. My question is, what about the next time? And the time after that? And what happens in a couple of years when the technology is developed to easily and accurately detect a person's drug intake with a minimum of inconvenience? Just in case you've been hoping that urinalysis will be struck down by the courts, think about all those Reagan appointees with their reactionary views on civil liberties occupying the highest judicial positions in the land for the next ten years.

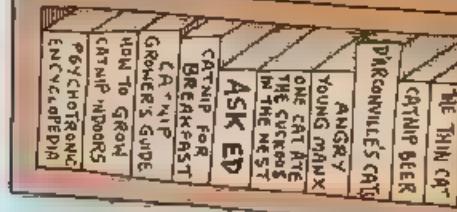
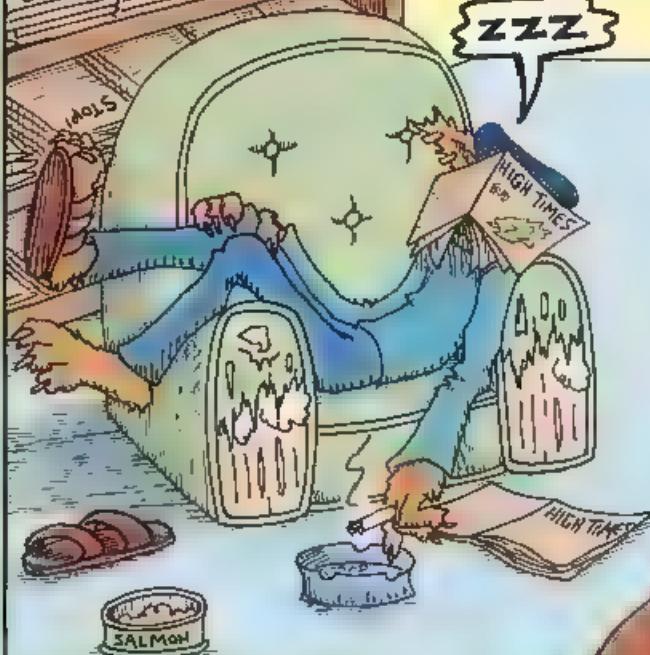
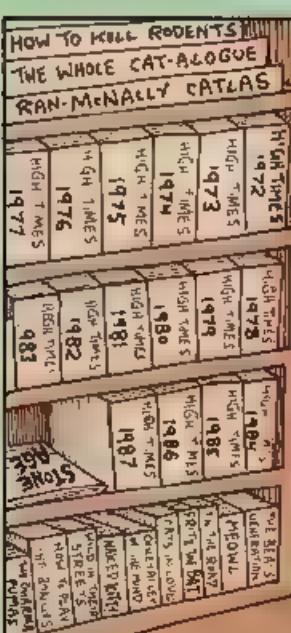
When faced with examples of collusion with an immorality such as urinalysis, I sometimes get a little cynical. Perhaps instead of spending so much time on the phone explaining how to beat the tests, I should instead refer people to someone else. Sometimes I relish the thought of the panic that would be set Washington, D.C. if Reagan could have his entire federal-worker drug-testing order implemented. Or how about as our next president a figure like Pierre DuPont, the man that wants to include urinalysis in such activities as getting a driver's license.

Instead of just playing the game, and thus legitimizing its practice, we should be doing at least the minimum to fight back. First off, anyone who receives information from NORML and does not join or give an anonymous contribution should think twice. NORML was there to help you that one time. If you don't minimally help us, we may not be there the second time. Also, don't keep the information to yourself. If your coworkers are facing tests, you should make copies of information on the test available to them. Just post a flyer or leave copies of the information around where they can be picked up. Don't forget to let your union leadership, your local newspaper editor, and your congressman know about your views on testing.

If you find testing absolutely repugnant, come join us in New York City this October, where we will be marching against urinalysis. Historically, when Americans want to express their political point of view, they demonstrate. Up until now, people have not been protesting urinalysis enough. At the same time, millions more have been humiliated by the tests.

Please join us for a march for dignity this October. If you haven't been tested yet, the future is waiting for you. I guarantee that if you do nothing, you will have a date with a specimen bottle.

Note: A new chapter of NORML is forming in New York City. Meetings are held once a month. All interested citizens should contact Fred Newton at (212) 249-3116.



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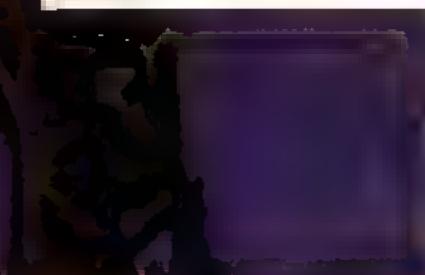
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AMERICA'S SECRET TEAM

BY JONATHAN MARSHALL
PETER DALL-SMITH
AND CLAUDIO MUSSET

Though the recent Iran-contra scandal has raised political problems for President Reagan and his National Security Council staff, it has also revived old concerns about what a Senate Committee once called "allegations of substantial, even massive wrong-doing" within the CIA and the rest of the national intelligence system.

The present crisis reopens these old controversies, for today's "Contragate" connection reunites elements of the alliances between the CIA, Cuban exiles, and the Mafia to assassinate Fidel Castro in the early '60s, one of the CIA's most notorious plots. More importantly, it also raises two old, and ongoing, institutional ques-

tions. The first is the extent to which the current controversy is centered on operations that were controversial in the past, and more particularly on the individuals responsible for them. The second is the more fundamental question whether covert operations are not, by their very nature, inherently inimical to the public interest, likely to transgress statutory authority, and hostile to public accountability.

Histories of the CIA usually trace its covert operations back to the Special Operations of its World War II predecessor, the OSS. But the continuity glosses over an elemental difference: OSS Special Operations were designed to challenge the legal and political authority of our wartime enemies, chiefly Germany and Japan. Covert operations, more often than not, make a similar challenge; but



as often as not they challenge authorities with which we are at peace, and indeed have recurringly challenged our own government and laws.

From their inception to the present, many CIA operations have been covert, not just to deceive foreign populations, but at least partly because they were designed to violate US statutes and Congressional will. A relevant example is the so-called "Defection Program" authorized in 1947 (by National Security Council Intelligence Directive 4, a document still withheld in full). Despite explicit Congressional prohibitions, this program was designed to bring Nazi agents, some of them wanted war criminals, to this country, to develop the covert operations capability of the United States.

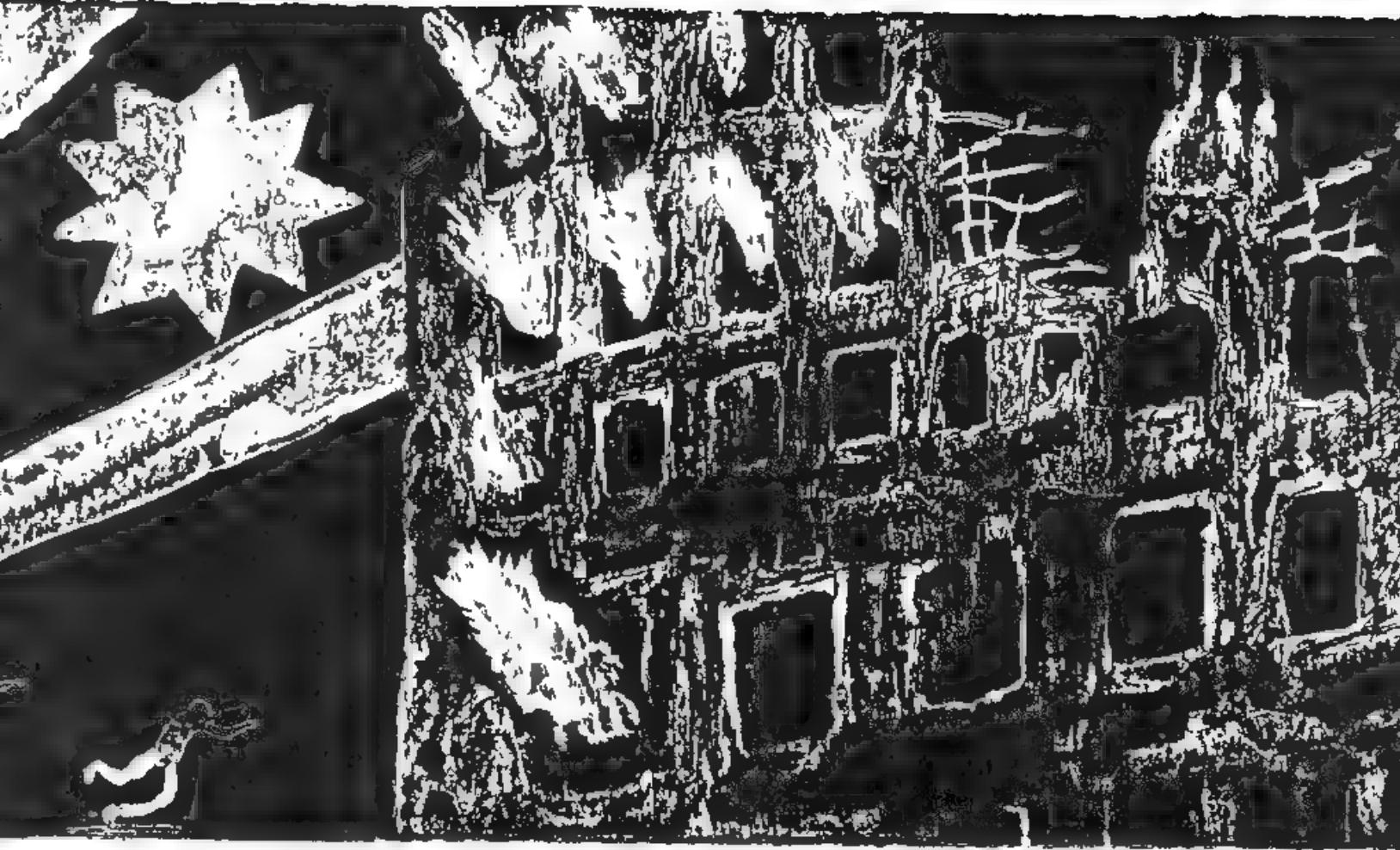
THE SECRET TEAM ROSTER

CIA	CENTRAL INTELLIGENCE AGENCY
FBI	FEDERAL BUREAU OF INVESTIGATION
OSS	OFFICE OF STRATEGIC SERVICES
NSC	NATIONAL SECURITY COUNCIL
DEA	DRUG ENFORCEMENT ADMINISTRATION
OPC	OFFICE OF POLICY COORDINATION
KMT	KUOMINTANG (NATIONALIST CHINESE—TAIWAN)
WACL	WORLD ANTI-COMMUNIST LEAGUE
APACL	ASIAN PEOPLE'S ANTI-COMMUNIST LEAGUE
CORU	CONGRESS OF UNITED REVOLUTIONARY ORGANIZATIONS
WFC	WORLD FINANCE CORPORATION
FDN	NICARAGUAN DEMOCRATIC FORCE

Some of these agents helped supply the cadres and trainers for the nascent US Special Forces, or Green Berets, some of whose veterans help supply the training and operational backbone of today's contra army in Central America. Others allegedly were among the Central Europeans who helped train the Cubans at the Bay of Pigs; their veterans' organization, Brigade 2506, is now a principal recruiting ground for contra supporters.

According to a US special warfare veteran, William Corson, some of these ex-Nazis became pilots in the 1950-52 supply operation of Civil Air Transport (later Air America) to opium-growing Chinese Nationalist (Kuomintang, or KMT) guerrilla forces in Thailand and Burma. In his book *The Armies of Ignorance: The Rise of the American Intelligence Empire* (1977) Corson notes that those knowledgeable about an in-house murder and resulting "Thailand flap" have theorized "that the trafficking in drugs in Southeast Asia was used as a self-financing device to pay for services and persons whose hire would not have been approved by Washington (or condoned if discovered)".

Another book, Alfred McCoy's *The Politics of Heroin in Southeast Asia* (1972), documents that the KMT forces were accompanied by white advisers, and that they were supported with arms and equipment by an American company, Sea Supply, Inc. In a sense, the Miami-based drug trafficking of the contras today can be traced back to this Miami-based corporation. Its organizer, Paul L.E. Hellwell, had been a member of an OSS team in Kunming,



JONATHAN ROSEN

Yunnan, that paid for its intelligence operations with opium. Later Hellwell and three other members of this OSS team—Howard Hunt, Lou Conein, and Mitch WerBell—would work with drug-dealing Cuban veterans on the Bay of Pigs invasion. WerBell in turn would work closely with General John Singlaub, the leading “private” backer of the contras today.

The scandals arising from this drug traffic and murder caused the KMT supply operation to be officially “terminated” in 1952, with lasting consequences for the CIA. One was that the offending subordinate group, the Office of Policy Coordination (OPC), was merged into the Agency. This meant that the OPC “cowboys” who had relished their unsupervised use of former Nazis and drug traffickers were now theoretically subordinated to the somewhat more bureaucratic line of command in the CIA’s Office of Special Operations (OSO). This was an unstable mix at the time, and it has been so ever since.

Thomas Powers has contrasted the free-wheeling, improvisational, “sometimes harebrained” style of the OPC “cowboys” with the professionalism of the OSO, who “not only distrusted the tradecraft of the OPC people, but on occasion went so far as to wonder just who they were working for, anyway (*The Man Who Kept the Secrets: Richard Helms and the CIA*). That tension would last through three decades of CIA operations to the scandals of Contragate.

A second consequence with equal bearing on Contragate was

that the severance of links to the Burma drug traffic was only cosmetic. The planes of Civil Air Transport, which had supplied the KMT troops in Burma, accepted a US government contract to fly them out of Burma in 1954. But in fact it only removed those troops who were ready for retirement. Fresh KMT troops were flown in and Civil Air Transport continued to supply them.

With Civil Air Transport in the ‘50s, as with Southern Air Transport three decades later, the distinction between official and private had become blurred enough to permit the continuation of a drug supply operation that had been officially prohibited. What had up to now been an American operation became a KMT-Taiwanese one. However, since Civil Air Transport had a Taiwanese KMT corporate entity as well as an American CIA one, the planes, bases, and nature of the arms flow remained the same.

The planes were now being sponsored by a new group, the Asian People’s Anti-Communist League (APACL), which had been set up by the governments of Taiwan and South Korea. APACL, later the World Anti-Communist League (WACL), was set up with the assistance of members of the CIA “secret team” in 1954, the year the United States “officially” wound up its Burma air supply operation. This support of APACL for the Burma air supply operation became clear in 1961, when Fang Chih, a KMT and APACL official, admitted responsibility, on behalf of the Free China Relief Agency, for an unlisted plane that had just been shot down over Thailand by the Burmese Air Force. The Free China Relief Agency turned out

to be a member agency of APACL, sharing offices with it at the same Taipei address. (Organized groups of ex-Nazi collaborators from Eastern Europe, later beneficiaries of the NSC-CIA Defection Program, have also been principal organizers of APACL/WACL from its outset.)

Despite official prohibitions, there is no doubt that, as a CIA investigation conceded, Air America planes flew opium out of isolated opium-growing areas, especially those held by Meo tribesmen in northeastern Laos, where land access was controlled by the enemy. Top intelligence and military officials of both our Laotian and Vietnamese allies were involved in this traffic, which led among other things to the seizure in 1971 of 60 kilos of Laotian heroin (worth \$13.5 million) from the suitcase of the chief Laotian delegate to the World Anti-Communist League.

That "secret" Laotian war of 1961-75, like the KMT Burma operation, involved air flights in and out of regions where the chief cash crop was opium. The CIA's prime Laotian protégé, Phoumi Nosavan, who "had controlled the [drug] traffic for years," and his subordinate Ouane Rattikone, solved their fiscal crisis by having the US-supported Laotian government "become directly involved in the import and export of Burmese opium. This decision ultimately led to the growth of northwest Laos as one of the largest heroin-producing centers in the world" (McCoy).

Despite official prohibitions, there is no doubt that, as a CIA investigation conceded, Air America planes flew opium out of isolated opium-growing areas, especially those held by Meo tribesmen in northeastern Laos, where land access was controlled by the enemy. Top intelligence and military officials of both our Laotian and Vietnamese allies were involved in this traffic, which led among other things to the seizure in 1971 of 60 kilos of Laotian heroin (worth \$13.5 million) from the suitcase of the chief Laotian delegate to the World Anti-Communist League.

As we have seen, the CIA secret war in Laos and Vietnam was crucial in generating today's "secret team" behind the covert Iran-contra supply operation. It was in that Laotian war that the key Iran-contra players got to know each other: John Singlaub (now chairman of WACL), Richard Secord, Theodore Shackley, Shackley's CIA assistant Tom Clines, and Felix Rodriguez (the anti-Castro veteran in charge of the contra air supply operation in El Salvador). But, in that same Laotian war the Contragate "secret team" of today was subordinated to the reconstituted ex-OPC "secret team" of the Burma KMT drug operation. In 1965 Richard Stilwell, released from the CIA after the "Thailand flap," returned to Thailand as US military commander to oversee the secret war in Laos. Under Reagan, Stilwell returned from retirement to the Pentagon, to promote the Reagan buildup of special warfare forces. William DePuy, Stilwell's deputy in 1952, also returned to Indochina under Stilwell in 1964, as the chief of the Vietnam SOG before Singlaub.

Underlying the continuity between the Burma, Laos, and contra operations is the importance to all three of the drug traffic. As John Ranelagh has written of the KMT Burma army, it "never

fought; it rapidly became a drug-producing operation instead." Though the fighting in Laos was real enough, the question has frequently been raised whether America's "secret team" were helping to maintain a drug operation in support of their anti-communist war, or helping to maintain a war in support of a drug operation. Similar questions have been raised about some of the contra leadership and their US supporters (at least in Costa Rica): Is their primary motive to fight or to engage in the drug traffic? In Miami the FBI has allegedly received an eyewitness report of cocaine being loaded on Southern Air Transport planes in Barranquilla, Colombia, at a time when the contra-supporting Southern Air Transport planes were in the Barranquilla area, as confirmed by flight records found in the downed Hasenpus plane.

A leading institution in this historic continuity has been the drug-linked WACL, which between 1984 and 1986 was the principal publicly identified source of funding for the contras. Since 1984, General Singlaub, as WACL World Chairman, has, in his own words, "quite frankly used the WACL organization ... to meet with some people who are capable of contributing" to the contra cause. Singlaub identified his three principal WACL sources as Latin America, Taiwan, and South Korea—the three areas where WACL members and their allies, as recently as the '70s, have been recurrently linked to the narcotics traffic.

There have been recurring rumors that profits from this same drug traffic have gone to finance an illicit lobby influencing and corrupting the American government. It is known that KMT officials in the US narrowly escaped conviction on narcotics smuggling charges in the '50s; and it has been alleged that the narcotics traffic was at this time "an important factor in the activities and permutations of the [KMT Taiwan] China lobby." This is of current concern because of the continuity between the bribery and other illegal activities of the China Lobby of the '50s, the pro-Somoza and anti-Castro lobbies of the '60s, the Chilean, Koreagate and Moonie lobbies of the '70s, and the contra lobby today.

THE CUBAN S-FORCE AND NARCOTICS

For years the American "secret team" has been allied with a more autonomous, close-knit band of Cuban exiles, whose work for their American handlers has included assassination efforts, major terrorist operations, and the famous Watergate burglaries under President Nixon. Some members were arrested in 1970 in the Justice Department's Operation Eagle, which was announced as the largest federal narcotics enforcement operation up to that time.

A recent suit brought by the Christic Institute, a non-profit religious legal foundation, alleges that members of this Cuban "secret team," in conjunction with its US intelligence allies, have also looked to the narcotics traffic to pay for its so-called "contra"

continued on page 68

SPECIAL INDOOR GROWING SECTION

ACCORDING to a recent report from NORML, 1987 is the year of the closet cultivator. It is also the year of our second annual special indoor growing issue. On the following pages, the world's leading cannabis authorities provide up-to-date information on how to turn that open closet into a garden of delight.

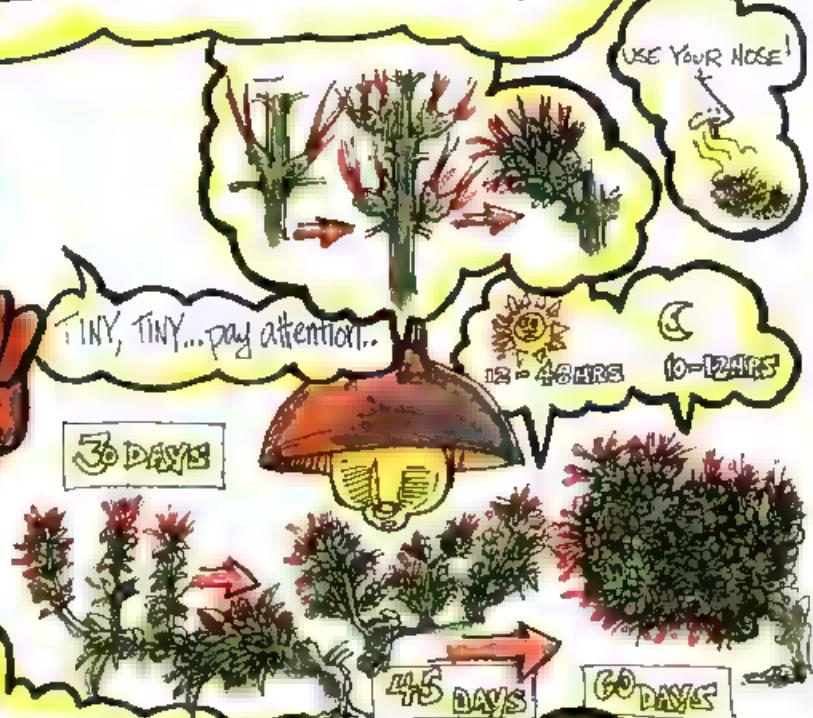


Budimals by Bram, grow equipment courtesy Paradise Lighting & Hydroponics, photograph by Jeff Vaughan

DR. INDOORS • GUIDE TO HARVEST.



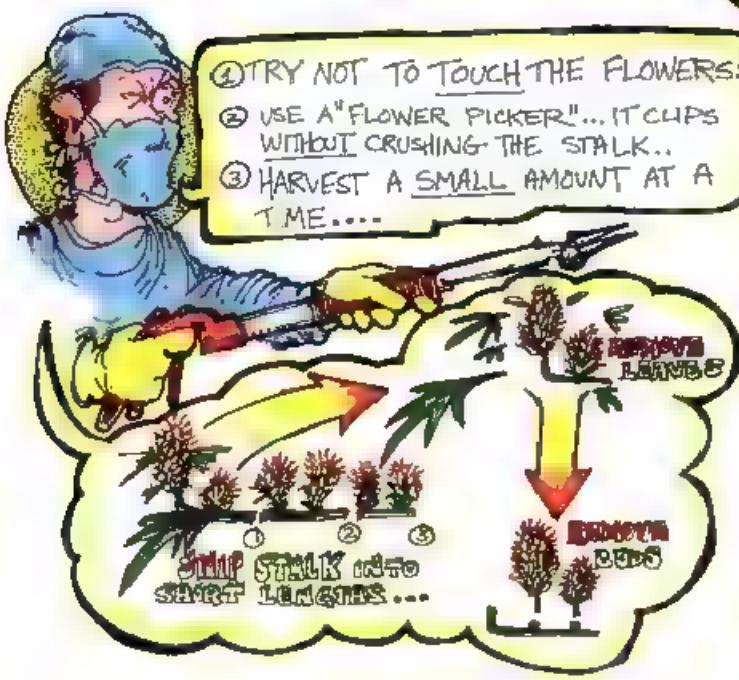
When do you harvest?
When are the flowers ripe?



CARTOON BY BRAM

HOW TO HARVEST

- ① TRY NOT TO TOUCH THE FLOWERS!
- ② USE A "FLOWER PICKER"... IT CLIPS WITHOUT CRUSHING THE STALK...
- ③ HARVEST A SMALL AMOUNT AT A TIME....



TRIMMING the BUD

TRIM THE BUD TO PROPER SIZE AFTER HARVEST. TRIM IT TO PROPER SIZE AND LEAVE IT ALONE TILL YOU USE IT. ONLY STORE TRIMMED BUDS



1/8" QUICK CLIP MADE LTD
TANER SNIPS WITH SPRING LOADING.
(HAS REPLACEABLE BLADES)

USE YOUR SNIPS TO TRIM OFF THE
SHADE LEAVES ①



PART THE BUD
AND SNIP OFF
THE SMALLER
LEAVES ②
USE THE TIP OF THE
SNIP TO REACH INTO
THE BUD TO GET TO
THE LEAF STACK

CUT BRACT LEAVES OFF "SQUARE"
CUT ACROSS LEAF CLOSE TO BUD
WITHOUT CUTTING OFF CALYXES OR
PISTILS



THE FLOWER WILL BE
EASIER TO TRIM IF YOU
TRIM IT FRESH AND WET
AND IF YOU HOLD IT BY
THE STALK UPSIDE DOWN!



REMEMBER

THE SETTING, PLACE AND MOOD EFFECT THE HIGH. CERTAIN TYPES OF CANNABIS
HAVE CERTAIN HIGHS...



ASTRAL: NEW
POINTS OF VIEW, ABILITY
TO TRANSVERSE TIME/SPACE

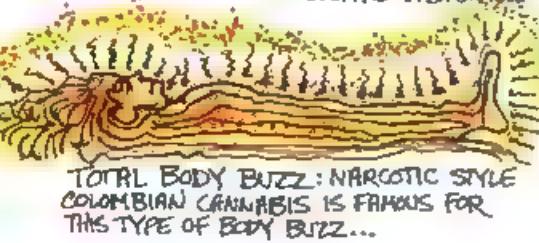
TYPES OF HIGHS



SPACEY
PSYCHEDELIC



HEAD BUZZ
COSMIC VIBRATIONS



TOTAL BODY BUZZ: NARCOTIC STYLE
COLOMBIAN CANNABIS IS FAMOUS FOR
THIS TYPE OF BODY BUZZ...

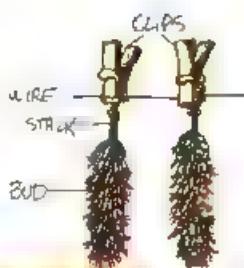


HEADY RUSHES

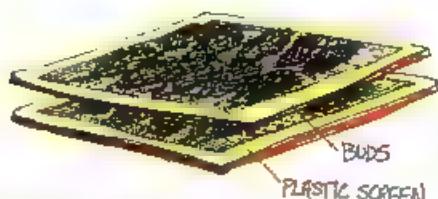


MELLOW-EVEN
HIGH-WATERISH...

DRYING



BUDS LOSE
70-80% OF
THEIR NET
WEIGHT



BUDS CAN BE DRIED BY HANGING
THEM OR PLACING THEM ON SCREENS DRY
TRIMMED BUDS ONLY DRY INDOORS PREFER
SCREEN DRYING (LIKE DRYING FOOD...) SCREEN
DRYING TAKES UP VERY LITTLE SPACE... LEAVE
ABOUT 6 INCHES OF SPACE BETWEEN PACKS!!

• USE A "MILD SLOW FADE" TO CIRCULATE AIR AROUND THE
BUDS. DRY THE BUDS TIL THE STEM STOPS TURNING BROWN THEN
PUT BUDS IN A STORAGE DRYING TAKES 7-10 DAYS... IF THE
BUDS GET TOO DRY THEY CAN BE RESTORED IN A HUMIDOR, LIKE
USED FOR TOBACCO... DON'T OVERDRY YOUR BUDS!!!

STORAGE



ZIP LOC FREEZER
BAGS WORK BEST
(QUART SIZE)



ZIP LOC FREEZER
GALON SIZE

STORE ONE BUNCH (AT MOST) PER BAG. THEN PUT SEVERAL BUNCHES
IN A LARGER BAG. THIS ALLOWS YOU TO REMOVE A SMALL
AMOUNT AT A TIME. JUST BEFORE
YOU SEAL THE BAG, SUCK ALL THE
AIR OUT OF THE BAG. STORE YOUR
BUDS SOMEPLACE COOL—COLD AND
OUT OF THE SUN. THE FREEZER
IS FINE. (MAKE SURE THE BUDS
ARE ENCLOSED IN SEVERAL BAGS)

ALL CANNABIS HAS
ITS OWN HIGH DON'T
EXPECT JUST EXPERIENCE
EVERYONE GETS HIGH
DIFFERENTLY EVEN
THOUGH THE HIGH IS
SIMILAR. SOME DON'T
UNDERSTAND HIGH,
SO THEY THINK THEY
AREN'T... KEEP TRACK
OF THE HIGHS FROM
EACH TYPE OF YOUR
CANNABIS SO THAT
YOU KNOW WHAT
KIND OF HIGH THAT
YOU LIKE BEST!!!

FREE ME!

SUPPORT NORML!

COME ON! THERE'S
ABOUT 50 MILLION
OF YOU OUT THERE..

FREE ME...

I HATE
BEING A
PRISONER

AT EVEN
\$1.00 @ month from
EVERYBODY...

WOW...

FREEDOM!



SUPPORT NORML!

on...oh...RIGHT...THOSE
OUT THERE THAT CONTRIBUTE
ALREADY...GIVE MORE..
THIS IS THE TIME ...thank

THE NATIONAL ORGANIZATION FOR THE REFORM OF
MARIJUANA LAWS (NORML)
2001 S STREET NW, SUITE 640
WASHINGTON, DC 20009
(202) 483-5500





Dr. Indoors and the **Budimals** are written and drawn by Bram, a Vermont artist. Bram's system is unique in its use of sub-irrigation, which feeds the plants from the bottom instead of the top. The roots are fully immersed, but a dry zone is left on top. The system prevents stem rot and damp off. As the nutrient solution drains, it creates suction, drawing fresh air around the roots. Consequently, the roots never clog the nutrient source, a common problem with many hydroponic systems. The trellis (see photos this page) is designed to hold the plants in a bell shape. This allows for open space, air, and increased surface for flowering. The trellis supports the plant, the roots feed the plant. To find out more about the **Dr. Indoors** system see the ad on page 89. Bram no longer grows anything. ●

Making Cheap

CO₂ !!

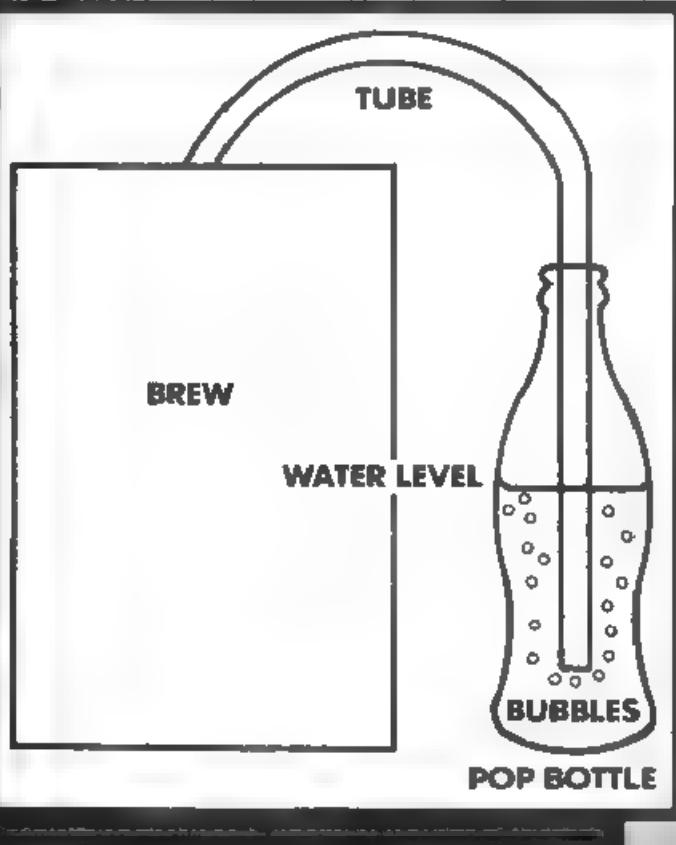
by Ed Rosenthal

Some cultivators would like to use carbon dioxide gas (CO₂) in their gardens but are wary of hauling tanks of gas into their homes or operating a natural gas CO₂ generator.

Dry ice might be a solution for the few people who have easy access to it. Dry ice is 100% CO₂ which has been cooled to -109 degrees F. At that temperature, the gas condenses directly into a solid, skipping the liquid state.

Another, more practical solution might be to create your own CO₂ using the biological fermentation process. Yeast are single-celled plants which do not have chlorophyll and do not use photosynthesis to obtain food or energy. Instead, they "eat" sugars and release alcohol—and the CO₂.

● A HOMEMADE AIR LOCK WORKS FINE IN A BIO-CO₂ UNIT.



To be technical about it, the yeast manufacture an enzyme, zymase, which breaks down molecules of sugar, C-6 H-12 O-6, into 2(CO₂) (carbon dioxide) and 2(C-2 H-6 O) (alcohol).

Each element has a different atomic weight. They are as follows:

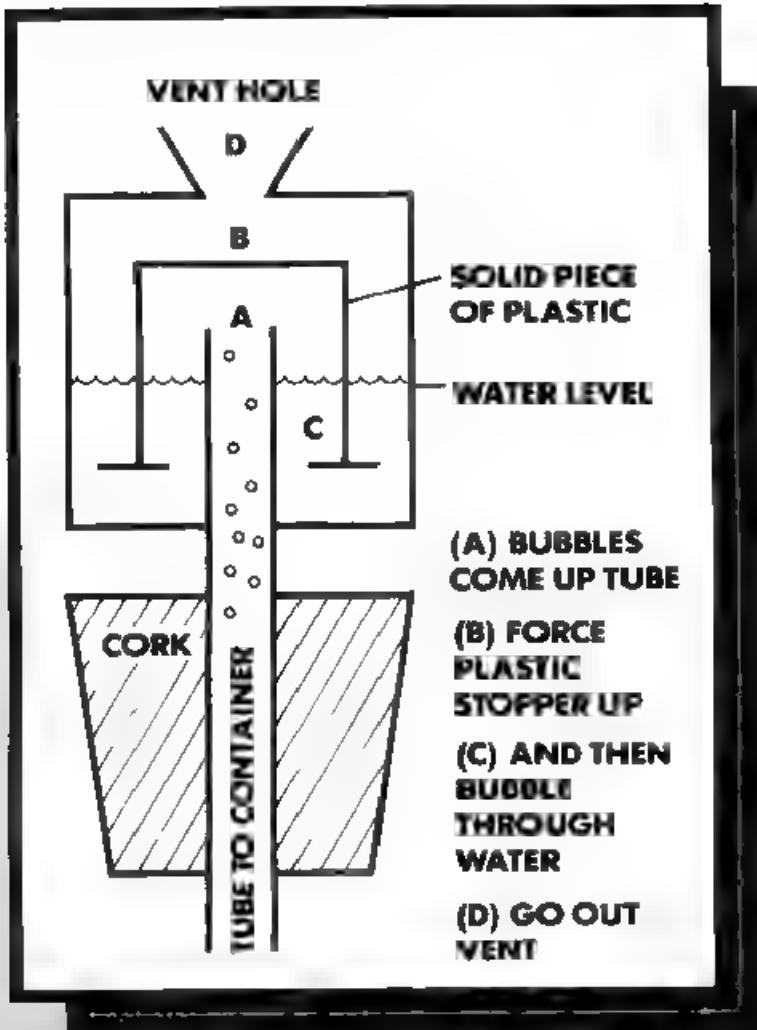
H (hydrogen) = 1
C (carbon) = 12
O (oxygen) = 16

By multiplying the number of atoms of each element in the molecule and adding them together you get the atomic weight of the molecule. For instance, sugar (C-6 H-12 O-6) is 12 x 6 + 12 x 1 + 16 x 6 = 72 + 12 + 96 = 180. The other totals are as follows:

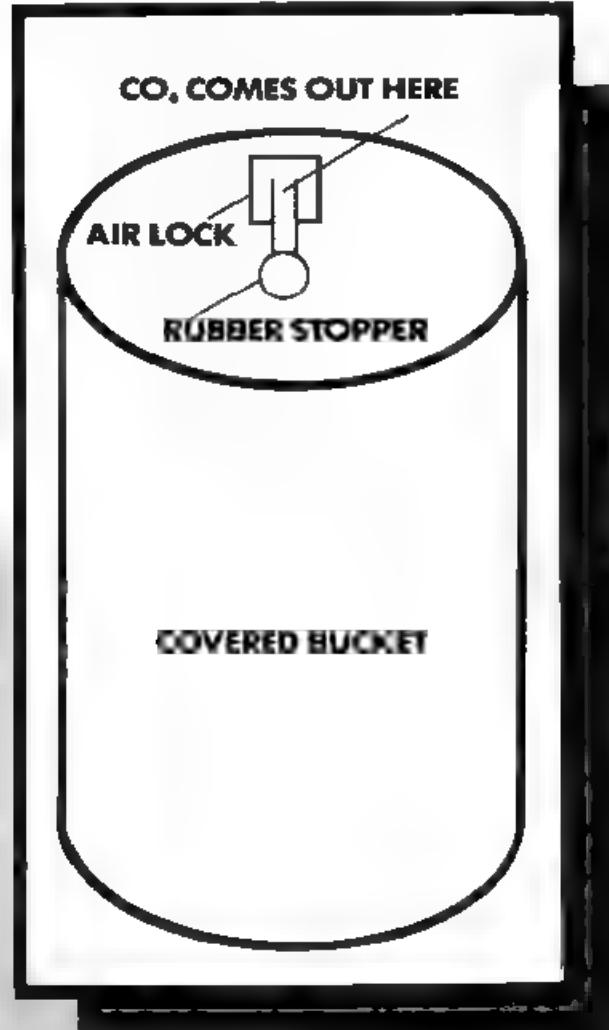
CO₂, carbon dioxide = 44
C₂H₆O, alcohol = 46

The formula, C-6 H-12 O-6—2(C O-2) + 2(C-2 H-6 O) reads numerically as 180—88 + 92.

• DIAGRAM OF A COMMERCIAL AIR LOCK.



• A BIO-CO₂ SET UP USING AN AIR LOCK.



For every pound of sugar used, .488 pounds or 7.8 ounces of CO₂, and .513 pounds or 8.2 ounces of alcohol are released. The fermentation takes about three days at high room temperatures of 70-80 degrees and up to ten days at 55 degrees.

One pound of CO₂ is figured as 8.7 cubic feet of gas. Thus, a pound of sugar produces about 4.25 cubic feet of gas. To produce one pound of gas, 2.05 pounds of sugar are required. A 50-pound gas refill costs about \$15 or 30 cents a pound. At 25 cents per pound of sugar, a pound of bio-CO₂ costs 51 1/4 cents (25 cents x 2.05). Of course, there are two byproducts: 16.75 ounces of ethyl alcohol per pound of CO₂ produced, and a residue high in raw brewer's yeast.

Each pound of sugar in one gallon of water creates about 6 percent alcohol.

Once the alcohol content of the water gets up to between 9 percent and 12 percent, the yeast become inactive. Only when the alcohol content of the solution goes down will they start metabolizing the sugar again. This means the ideal solution is 1 1/2 pounds of sugar per gallon of water. This produces 9 percent or 18 proof alcohol.

BIT OF

To set up a bio-CO₂ unit, a container of sufficient size with a tight-fitting lid is required. A one-gallon milk container will do for a gallon; a wide-brim, five-gallon food container is also convenient. 20- or 30-gallon containers can also be used, but may be inconvenient because they are hard to move once filled.

A rubber or natural cork should be fitted to the container, with a plastic tube attached so that the CO₂ can be

released once it is produced. Either a commercial airlock or homemade one must be used in order to prevent the solution from getting contaminated with airborne wild yeast.

A cooking thermometer is needed to measure the water temperature.

INGREDIENTS

A one-gallon jug uses about 1 1/2 pounds of sugar and produces about 1/4 pound of CO₂. Besides the water, other ingredients required are champagne yeast and yeast nutrient, both of which are available from wine- and beer-making supply houses. The alcohol produced is ethyl (drinking) alcohol, but the brew will taste pretty bad; however, the alcohol can be distilled for drinking. Good-tasting brews can be made using malts and corn sugar, but these take a little more effort.

continued on page 69

The plant on the next page is called **Skunk #1**. Many dealers consider it the finest marijuana in the world. It is a *sativa-indica* hybrid that was first grown in California. It was then developed by Cultivators' Choice and went on to win several California harvest festivals.

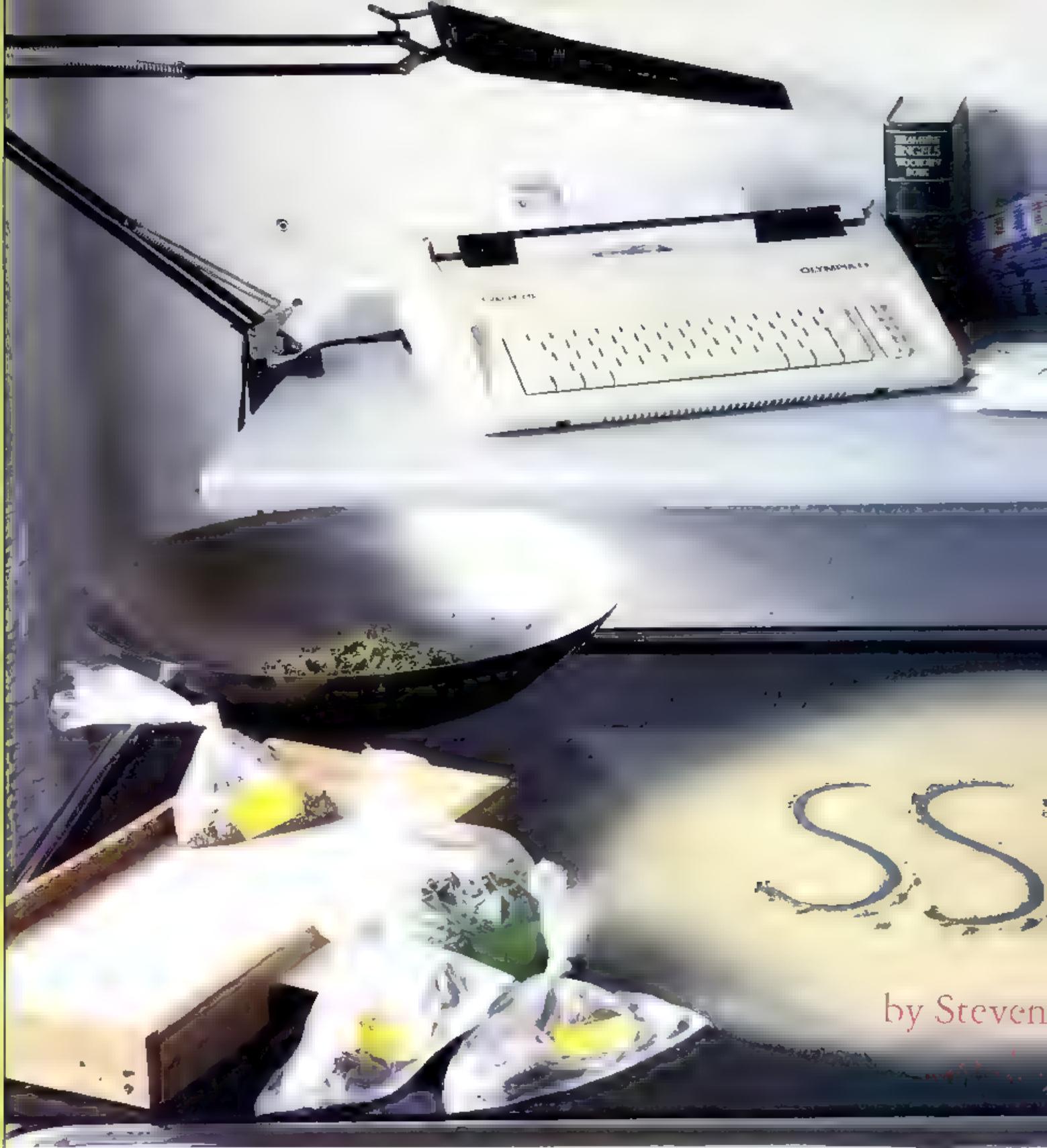
But look again. This is no ordinary **Skunk #1**. This plant is less than two feet tall and contains the central bud of a much larger plant. It is, in fact, little more than a popsicle stick coated with resinous flowers. And it was grown indoors—in Holland.

Ten years of Dutch growing experiments were necessary to produce plants like this one, techniques that until now have remained a closely guarded secret. Now, in an exclusive report, **HIGH TIMES** blows the lid off in... **SECRETS OF THE HIGH TECH GROWERS!!** So turn the page and learn how you can fill YOUR grow room with similar plants!

Neither you nor the world of marijuana will ever be quite the same!!!

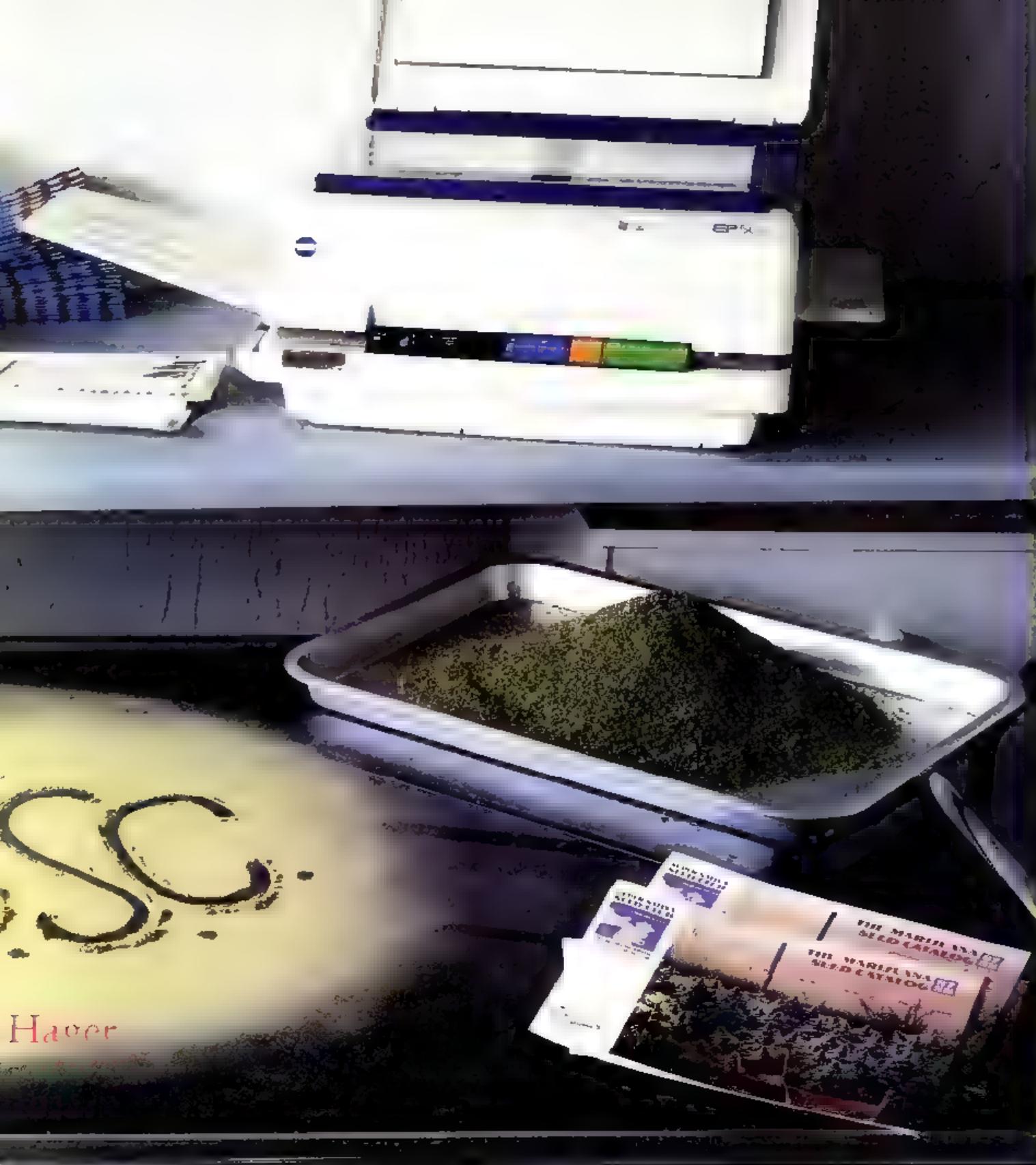
PHOTOGRAPHY BY JEFF VAUGHAN





by Steven

HOLLAND is not a particularly good place to grow. It is cold, rainy, and cloudy most of the year, the soil is rocky, and much of the arable land is reclaimed ocean bottom. But the Dutch are an ingenious and persistent race, and over the years they have achieved a victory against this harsh environment. The secret of their success was to move indoors and grow hydroponically. Flowers, plants, and produce are cheap and abundant in Holland. Although they



JEFF VAUGHAN

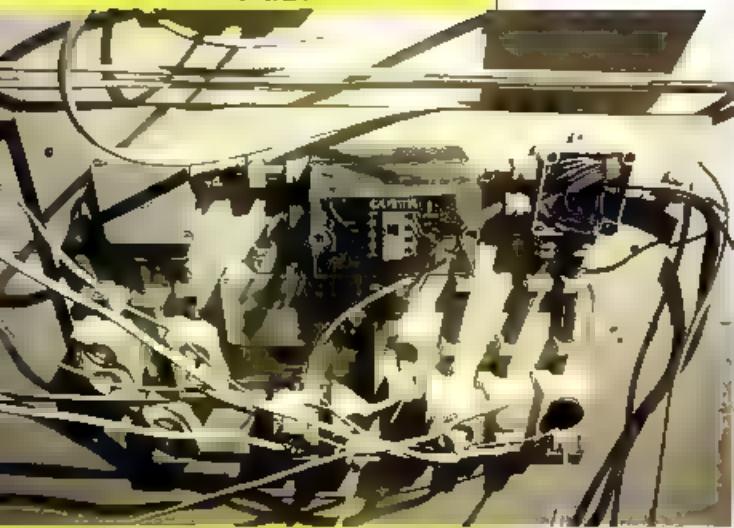
have been farming this way for many years, marijuana cultivation is still a relatively new concept. The Super Sativa Seed Club (SSSC), a consortium of growers located throughout the country, comprise some of Holland's first commercial marijuana growers.

"We are ten years ahead of most of the growers in Holland," says Kees, one of the company's founders. "Our approach is the most technical and the most sophisticated."



JEFF VAUGHAN

Several hundred mature plants are shown here on the ebb and flow table.



The S.S.S.C. system relies on state-of-the-art electronics.

continued from previous page

The cornerstone of the SSSC method is the ebb and flow table (see photo left). Several times a day, the table is flooded with nutrient solution. Three-week-old clones are placed on the table and flowered immediately, a system that produces small, portable plants of incredible potency. The system is designed for maximum harvest out of minimum space.

"The first thing we did when we wanted to grow was read the trade magazines for greenhouse growers in Holland," says Kees. "Why reinvent the wheel? There are people here who have spent a million guilders on indoor growing. Don't you think they know what they're doing? We started with large plants like everyone else, but the plants would get big and start to droop. We saw lots of holes between the plants where the floor was visible. That's when we started flowering clones. Now we can harvest three kilos five times a year in an area three feet square. And I have the feeling this is just the beginning. I think yields will be much bigger soon!"

Dutch growers differ from Americans in two respects. They are more practical and less interested in organics.

"We are not dreamers," says Kees. "Americans are always dreaming about impossible things like... 'What if I had 1,000 lights in a warehouse?' We don't have a thousand lights, so we think it's bullshit! We only dream about practical matters."

"I don't really approve of weed grown out of Rockwool," counters Robert Connell Clarke, a typical organic researcher. "I have a hard time eating food produced by chemical agriculture. But I have to admit the results from SSSC have been amazing."

The company is currently experimenting with pure *sativas*, including Haze, a legendary strain developed by Cultivator's Choice.

"We want to make *sativas* with big hairy buds that flower early," says Kees. "We also want to emphasize the importance of keeping strains alive. Many have already begun to disappear."

The SSSC catalogue can be obtained by writing Postbus 1942, 1000 BX Amsterdam, HOLLAND. (For a more detailed description of the "Sea of Green" growing method, turn to page 64.)



This room is in the process of being set up for flowering. Sodium and halide lights have just been unpacked and installed over the ebb and flow table.

Clones are kept under a plastic cover for high humidity and protection against harsh light.



The view underneath the ebb and flow table reveals two water tanks and a powerful pump. The table is placed on rollers and can be shifted easily as one walks around the room.

JEFF VAUGHAN

JEFF VAUGHAN

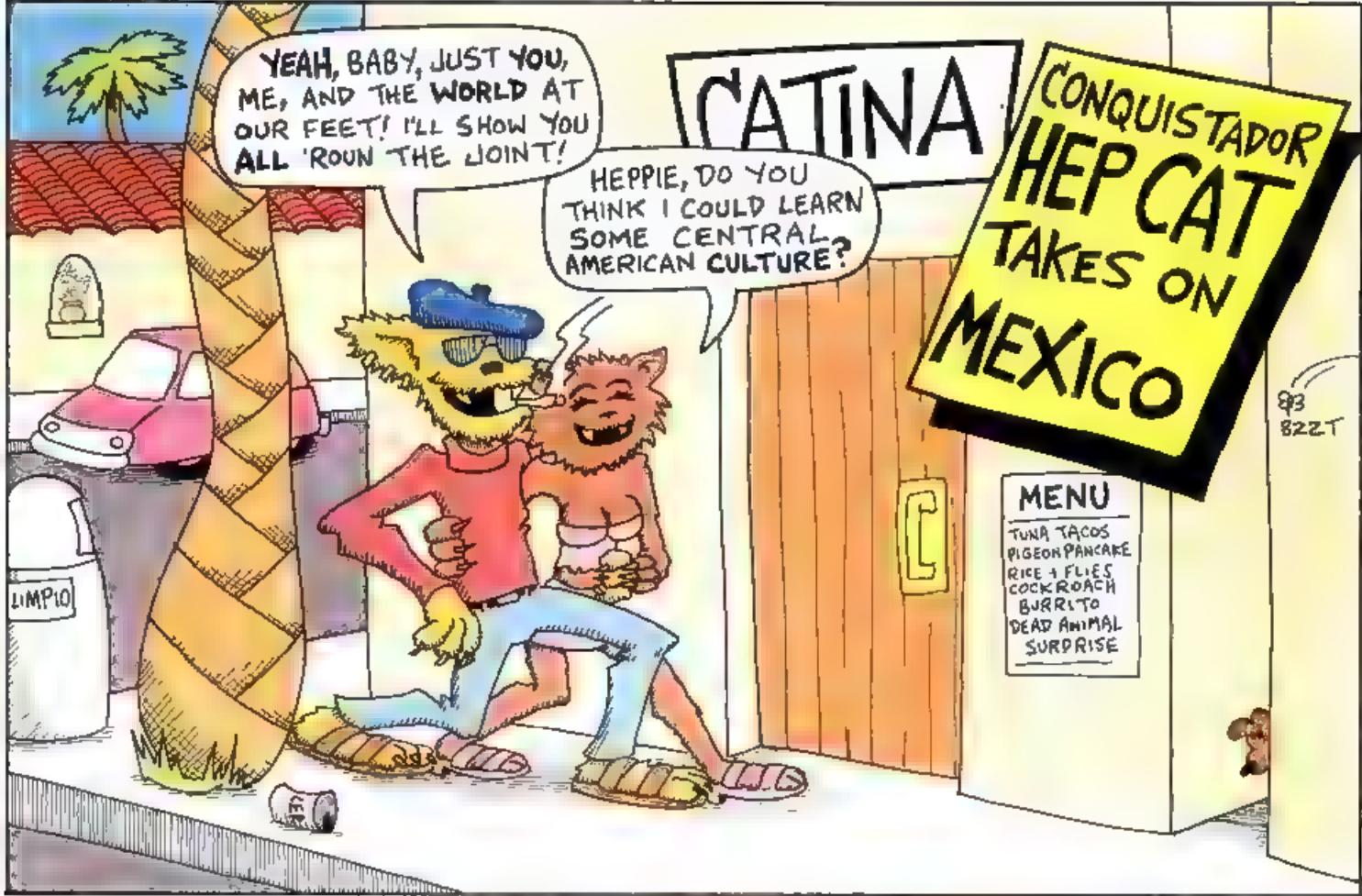




DURKEE PERSON

by S.

PHOTOGRAPHY BY
VAUGHAN



©1987, BY JOHN HOLMSTROM + GED MacSPADE — WRITTEN BY GED MacSPADE, DRAWN BY J. HOLMSTROM

I'LL TEACH YOU ALL YOU NEED TO KNOW, BABY!
WHY, BEFORE TONIGHT IS UP, YOU'LL KNOW HOW
TO DO THE "MEXICAN SALUTE" LIKE A NATIVE!



MEXICAN SALUTE? SEE? YOU GOT IT DOWN ALREADY!
WHAT'S THAT? OWCH!



THIS LOOKS LIKE A
QUAINT LIL' CAFE!

CAFE

NOW, JUST LET ME DO THE TALKING! YES, MY SWEET! YOU'RE SO GOOD AT THIS! {SIGH!}



OH, GARCON! YO
QUIERES HUEVOS
CON JABON POR DOS
"SIL-VOUS PLAÎT"



HUALP! IT'S ALL IN THE DELIVERY, M'DEAR!

OH, HEP!

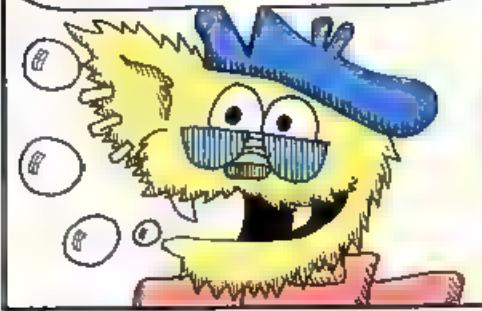


* I WANT SOAP AND EGGS FOR TWO, BOY!

OOH...ICK! HEPPIE, ARE YOU
SURE THIS FOOD IS OKAY?



OF COURSE IT'S OKAY, LORETTA!
THINGS TASTE DIFFERENT
IN OTHER COUNTRIES! FINISH
UP AND I'LL SHOW YOU SOME
MORE STUFF I KNOW!



I'LL TELL THE WAITER THAT
THE FOOD IS DELICIOUS! WATCH!
"TU TIENES BONITOS HUEVOS!"



MMMM! SMACK!
KISS * SMOOOOCHE!
SLURP!
EEK!



HEY!
WHAT TH-?
MM MM
HEP ZE BAH! * OOOH! DIME MAS!
DIME MAS! *



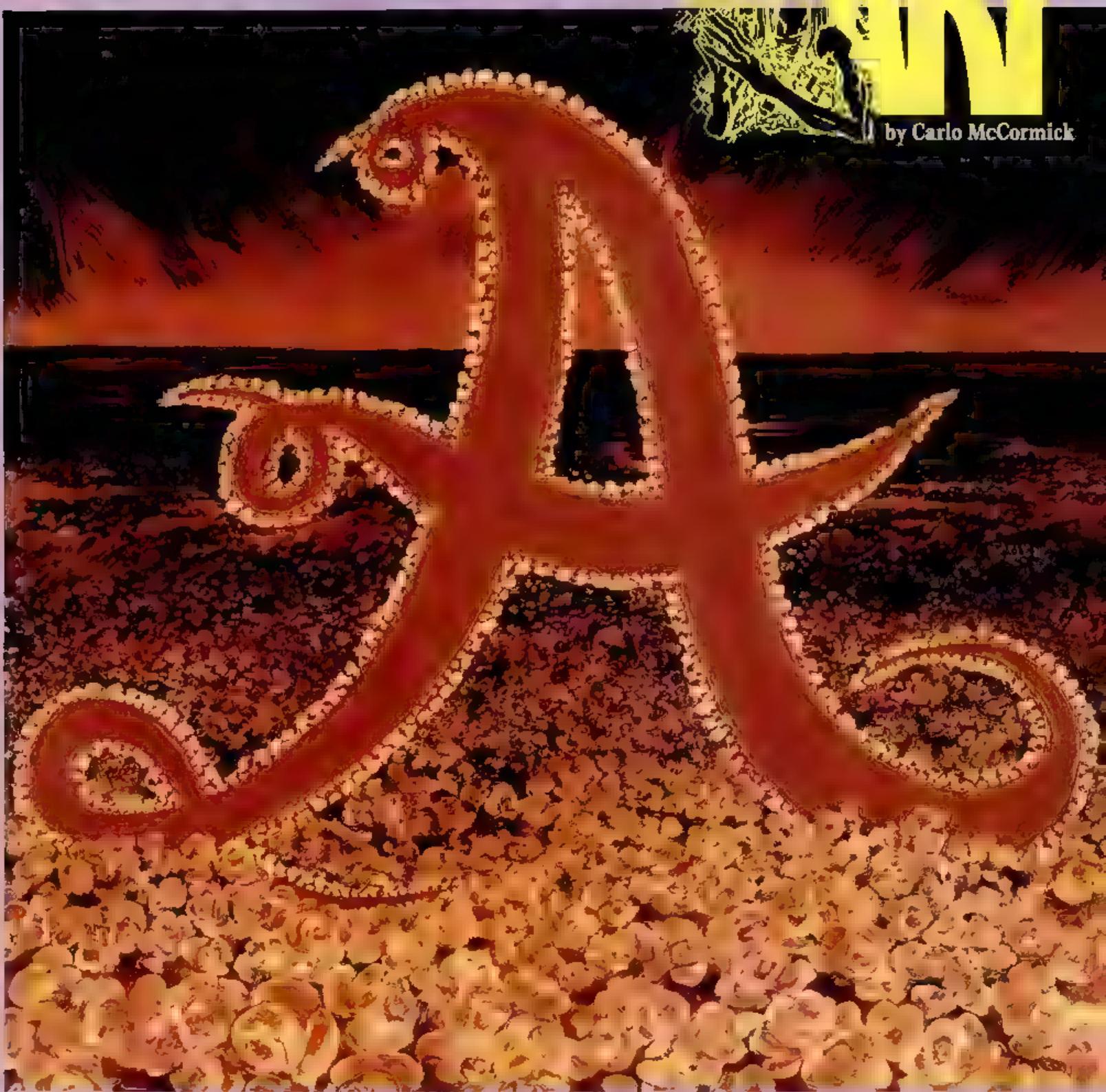
TAP
TAP!

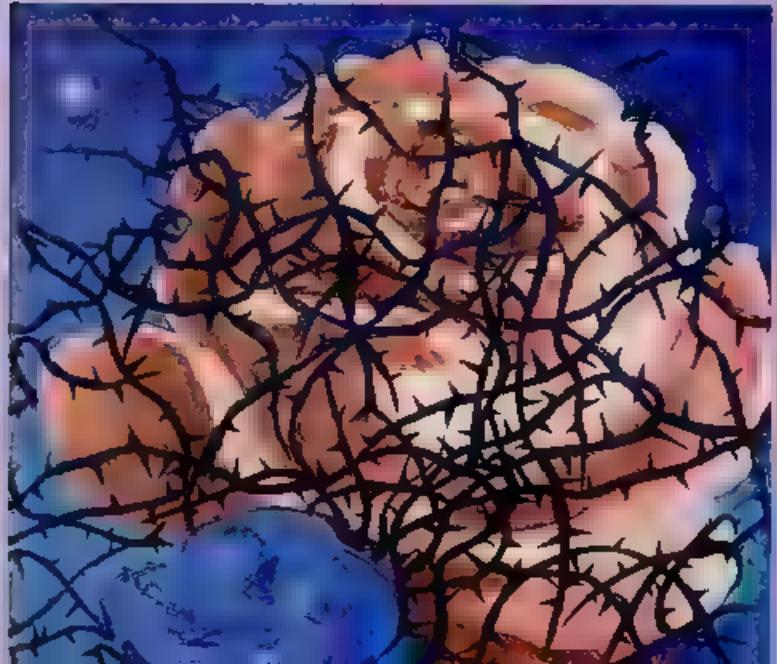
* OOOH! GIMME MORE! GIMME MORE!

Keiko Bonk: painter, poet, singer—a Hawaiian Circe transplanted (via San Francisco) to the underground youth culture of New York. Midwife of psychoactive orgasmoplasm, Bonk delivers the seething soul of adolescence from the



by Carlo McCormick





cosmic lobs of elemental passion, distilling the raw, electric energy of head-fucked America's gnarly, mutant breed of wreckless rock-and-roll wildlife.

Bonk paints the totems and shrines of the outcast, the outlaw, the outsider, the out-of-their-minds rebels. So intense is the force of this art's primal passion that it is able to rescue the hackneyed Images of pop nostalgia and recharge them with awesome powers of mystical catharsis. In a mythical dreamscape illuminated by psychedelic sunshine and darkened by an apocalyptic gloom, Bonk excavates from the ruins of cultural cliche and media misunderstanding the sacred relics of a golden age of mass hallucination. Intoned like the lost chords of the battle hymns of the freedom freaks, or the celebratory chant of enlightened hedonism, or, alas, the death wail of radical nihilism, Bonk's peace signs, skulls, flames, Harleys, overdosed rock legends, scarlet letters, surfer waves, machine guns, and guitars are her iconography of death and desire.

Do we bow or dance before this kingdom come? Those emblazoned scarlet A's for example. Are they stigmas of shame or stigmata of purification? Do they signify Adultery, Anarchy, or AIDS? Perhaps they embrace all those—and many more meanings—in the infinite abyss of our emotions. This universe, entered through the doors of introspection, is a yin/yang dual reality of transgression and transcendence. The cosmology of spirits unleashed in this work is both menacing and comforting, fertile and futile, for these images are not answers, they are questions, and their power upon our fate is equally that of demon and deity. ●



SEA OF GREEN

BY KYLE ROGERS

Burn Out didn't get his name from racing cars. He's also not known for his abilities, human or otherwise. If it can't be fixed by swearing or throwing it, it's dropped from his third-story window to see how high it will bounce. "Sometimes when my head is just right, I can even watch it bounce in slow motion."

Burn Out also grows pot. Not by choice. He's one of those incredibly loud people who probably couldn't even score in Amsterdam. His homegrown's dubious quality stems from the fact that metal halides show a decrease in output after being dropped three stories. But they are recognizable as plants. Sorta. Pot to him is anything that makes his throat raw. Knowing this about him makes what happened even more incredible.

I was enjoying the delights of Heavily High when I heard frantic scratchings on

my door. Burn Out flew in, white as coke, muttering "Sea of Green," over and over "Sea of Green?" I asked.

"It's the most amazing growing technique. Ernie, the Pot Grower's Poltergeist, revealed it to me in a flashback."

"You sure you weren't going thru back copies of *High Times* while tripping?"

"Don't be a jerk," said Burn Out. "You know I never read!"

I couldn't argue with that. "I can increase my yield by eight, ten times, maybe more!" he shrieked, as I ran around closing windows and turning up my stereo. "I can get repeated, no-hassle sinsemilla harvests from one plant. I can even presample the bud. It's like having your pot and smoking it too—forever!"

I stared at him as he grabbed onto my curtain and slid down the wall, leaving a dirt trail, repeating a thank-you chant to the God Ernie.

"What's more," he cried, coming out of his meditation, mopping sweat off his face



with my electrostatic headphone cups. "It really is no hassle. Ernie says even I can do it!"

This from a freak who inadvertently grew the only recorded one-foot pot plant upside down. He thought the roots growing into the air were some new, hybrid, designer buds. "Hey man, all those white hairs—just no resin." He smoked the roots for two weeks.

I had doubts about his abilities.

After a few months, Burn Out's continuous bud harvests were nothing less than astounding. If he could do it, I could do it. Hell, if he could do it, any bonehead could do it.

SECRETS OF THE HIGH-TECH GROWERS REVEALED!!

JEFF VAUGHAN

Ernie, the Pot Growers' God, was right. The Sea of Green concept is simple: six mature, one-foot cuttings (clones, plantlets) will give the same yield as one six-foot plant—outdoors. Indoors, because metal halide/high pressure sodium light output decreases with distance from the bulb, six one-foot plants will give a greater yield than one six-foot plant—and you won't get stuck endlessly bending branches. The Super Sativa Seed Club of Holland, who developed the technique (they call it the "Plantlet Method"), recommends flowering at ten-inch height for greater space utilization and harvest. You'll have myriad smaller plants that won't have time to develop wasteful branches, just large top buds!

And here's the best part: All the plants will give you a guaranteed 100 percent sinsemilla harvest, the most potent of all buds. There's no wasted space and effort growing males, or searching and breaking crowded branches looking for a chance male pollen sac. There's no chance of a premature ejaculator spoiling your crop.

Because you're using short cuttings, indoor growers aren't restricted to compact *indicas*. You can also have a soaring 16-foot *sativa* high at one and a half feet!

In short, more potent, higher yielding harvests, and more of them per year.

Because the budding plants are cuttings from your favorite female mother(s), they will be identical to her. They're put into a 12-hour flowering period to bud out, while new cuttings are being rooted and vegetated from the same mother. This can be repeated up to two years from one plant.

Pinching the top off the plantlet will cause it to branch, increasing your yield still further, instead of one main top bud, you'll have four! This should be done at least two weeks before the clone is put into 12-hour flowering mode, or after it has developed new, robust growing tips.

If you're not sure the mother might not be a father (or both), merely take two cuttings as early as you can and put them into a 12-hour flowering mode a week or more

after cutting. Cloning can be traumatic for the plantlet. Going directly to 12 hours of light to force flowering when the poor thing doesn't even have a root system leads to high mortality, as well as causing a few survivors to go hermaphrodite, even if the parent wasn't. If it's a female, you'll have a sampler sinsemilla stash while waiting for your first big lad to come in.

If space to keep the mother vegging is scarce, make a few extra clones, keep them in an 18-hour veg cycle, and make your next batch of clones from them.

By comparison, if you're growing only with seeds and starting with 20, maybe 16 will make it to a vigorous adulthood. Two months later you've wasted space and electricity when you find that eight of those are males. And if there was a truly incredible female in the gang, she's up in smoke. With cuttings, if you have room for 20 cramped adult plants, you can have a massive harvest of 80 clones—all incredible females! And then do it again, and again.

"The God Ernie told me the going rate for a sexed, rooted clone is between \$40 and \$125," said Burn Out. "Shit, because I'm selling to fellow growers, I don't have to worry as much about them doing something dumb to blow my cover!" he yelled from the street, through my closed window. "Cloned marijuana plants make great presents, too!"

WARNING: Do not use 24-hour light at any time! The SSSC has found it sets the plant's biological age back to zero. Otherwise, each cutting will be biologically as old as its mother. Immature plants (under two months) can be forced to flower, but the quality and yield will be nowhere near that of a mature plant.

MAKING CUTTINGS

Making a rooted cutting is kinda like sex. Probably no two growers do it in the *exact* same way, but there are some basics:

1 Choose a healthy branch with growing tip(s). It shouldn't be more than one-fourth of an inch in diameter. Smaller is preferable.

2 The cutting is only going to be between one to two inches high. Cut off large or full-size leaves. Without its root system in place, large leaves will sap everything from the little clone.

3 Recut the end to be rooted with a sharp razor at a 45-degree angle. This exposes more plant material that will develop roots, as well as bringing water into the stem before the roots appear. It's important the razor be sharp, so the opened veins at the end aren't crushed shut.

4 Dip the end into a rooting hormone. Hormex and Rootone are two examples. They should contain napthaleneacetic acid, indolebutyric acid, and a fungicide to help prevent stem rot.

5 Insert the stem snugly into a Jiffy Pot or Rockwool cube saturated with your veggie nutrient at half-strength. You might also add some root hormones to the solution. I've found Rockwool cubes give a higher success rate.

6 Put the clones under fluorescent grow lights, set to an 18-hour photoperiod. Cover or tent to keep the humidity 95 percent or higher. They don't need as much air at this time as they do humidity.

That's it. After five to seven days, gradually let more air in. Within two to three weeks, roots will be seen coming from the cube. Plant growth will return to normal. Pinch the tops off as soon as feasible.

When the cuttings reach the desired height, put them into a 12-hour flowering mode and start on your next batch of clones. When you get your clone legs, you'll easily be having a 95/100 percent success rate. Until then, make about 25 percent more than you'll need.

"And," adds Burn Out, "Don't forget to thank the God Ernie!"

RULES FOR INDOOR GROWERS

BY ED ROSENTHAL

IN 1970, THE FEDERAL GOVERNMENT enacted the Uniform Controlled Substances Act, also known as Title II, Comprehensive Drug Abuse Prevention and Control Act of 1970, Public Law 91-513, which established five categories, or "schedules," of what were considered abuse-potential substances. Marijuana was included on Schedule One. This law also distinguished between trafficking in the drugs under its jurisdiction and possessing them for personal use without approval or prescription. Trafficking was defined as unauthorized manufacturing, distribution, or possession of a controlled drug with intent to distribute. Maximum penalties for marijuana trafficking ranged from a sentence of 5 years and a fine of \$50,000 for up to 10 kilograms, to 15 years and \$125,000 for 50 kilograms or more.

Last fall, Congress passed a new law, Title I, Anti-Drug Enforcement, Narcotics Penalties and Enforcement Act of 1986, which provided for more severe penalties for marijuana trafficking. A trafficking conviction for 100 kilograms or more requires a sentence of not less than 5 and not more than 40 years, and a fine of up to \$2,000,000. A second offense requires a sentence of not less than 10 years and not more than life, and a fine of up to \$4,000,000. Penalties for offenses involving 1,000 kilograms or more are now set at a sentence of not less than 10 years and not more than life, and a fine of up to \$4,000,000. For second offenses, the penalties are doubled: not less than 20 years and not more than life, and a fine of up to \$8,000,000.

Also passed was an amendment that would allow courts to impose sentences below the level established by statute "so as to reflect a defendant's substantial assistance in the investigation or prosecution of another person who has committed an offense." In other words, substantive cooperation provides a loophole in otherwise mandatory sentences.

—The Editors

In 1986 a new anticrime law was enacted by the federal government. This law increased the federal penalties for the possession, cultivation, and distribution of drugs, including marijuana.

Since the law was enacted, the Drug Enforcement Administration (DEA), an arm of the federal government, has been active in seeking coordination of efforts with local authorities. Because marijuana possession, cultivation, and distribution are proscribed in both federal and state statutes, the authorities check to see which laws would be most damaging and then charge a suspect under the harsher laws.

The narcs take any amount of cultivation seriously. The act technically falls under the term "manufacture," and the government seems determined to stop supply by stopping production. When Carleton Turner first became Drug Policy advisor to the President in 1978, this organic chemist from Mississippi told me that he thought that the way to stop supplies of drugs was to make the laws so harsh that it would not be worth it to risk the penalty.

"Enforcement of the laws is something that society wants one day and something society does not want the next day. It will be extremely difficult to enforce the laws of this country on the use of cannabis. On the other hand, if the penalties were so severe that the use would not be worth the consequences if you were caught, you would reduce it. But as an objective individual, and knowing that you can grow cannabis anywhere, I think it would be impossible for the government to absolutely eradicate the use of cannabis in this society. I don't think it can be done.

"Regardless of the political implications, if it were the death penalty, I think that both you and I agree that there's no way that some of the people we know that use it would even touch it with a ten foot pole."

The Reagan Administration has adopted Turner's drug philosophy, not only by making the laws harsher, but by enforcing them more diligently and giving the convicted stiffer sentences.

But social innovations do not function in a vacuum. Turner's policies have yielded some results unanticipated by the government. Until 1981, the cost of THC had remained fairly stable since the early '70s. That is, in constant dollars (taking inflation into account), the cost of a gram of THC found in grass had remained the same.

It is true that the price of grass had gone up dramatically over the years, but so had the quality of the grass. For instance, a kilogram of '60s Mexican may have contained grass with 1.5% THC. However, up to two-thirds of the kilogram contained unusable matter including seeds, twigs, and contaminants such as small pebbles. Altogether, that kilogram contained about 5.25 grams of THC. An early '80s kilogram contained material that was about 3.5% THC and 65-90% usable. It contained an average of 27.5 grams THC, more than five times the THC found in the early Mexican.

Since 1981, the price of THC has doubled in constant dollars. This means that there is more demand than a stable source of supply, so prices rise. While the Reaganites probably would not admit it, there is more than one reason for the price increase. Pressure on the supply side is only one factor. Another is that more people are using grass. In the early '60s, few people over 20 smoked grass; by the '70s, few people over 30, and in the early '80s, few people over 40. Each year the demographics of the head population broadens as younger people start to indulge and older heads continue. In order for prices to remain stable, the supply must increase each year.

Although the Reagan Administration did not foresee it, the CAMP programs (Campaign Against Marijuana Planting) in California are the only successful farm support programs that the government has developed. While the price of virtually every other farm commodity has dropped considerably in both real and constant dollars, successful marijuana

farmers are reaping the profits directly connected with the marijuana policies. If the government did not put pressure on supply, prices would drop and there would not be as much incentive to get into the highly profitable trade.

In other words, what Turner did not see was that as the supply of a free-market commodity decreases, the price goes up, giving potential suppliers more of an incentive to get into the business. Turner's marijuana farm support program is unique in several ways, but follows the general farm support policies.

Many support programs seek to limit supply by restricting planting. Usually a farmer can only plant a percentage of his acreage. Turner's program does this by making sure that plants are grown only in small patches, in greenhouses, or indoors under lights. Most government farm support programs require that the government hold commodities as

be saved. As the price of cereals climbed, new people would come into the market to take advantage of the tremendous profits to be made, and new technologies and varieties would be developed to meet the more esoteric needs of the new breed of farmer. Finally, corn farming could become an urban, even indoor industry: "Got some beautiful ears in my basement."

The only inequitable part of the program is the arbitrary taxes imposed on growers and merchants. Rather than imposing a tax on all the cultivators and merchants, the government has decided to leave the vast majority untaxed and to levy the full weight on just the few it catches. The government attempts to seize all profits and materials used by a particular participant within the industry. Eventually the police will become the equivalent of a banker in a card game. By grabbing a small percentage of each pot,

LISTING OF THE NEW FEDERAL CODE REGARDING MARIJUANA

Here are some simple rules that indoor gardeners should follow:

1.) Keep the garden on a need-to-know basis. Casual lovers, friends, and acquaintances do not need to know. By not telling their friends, growers are doing them a favor. This way, they have no information to keep between tight lips.

2.) Never show material that might implicate them as a grower to people who do not know about the garden. For instance, do not show unmanicured material to smoking buddies or offer to give leaf to a friend for brownies.

3.) Make sure to make the garden as secure as possible. No sounds, odors, or light should emanate from the space.

In the case that I mentioned in South Dakota, the indoor garden was raided by

● Both the price and potency of pot have risen dramatically.

● Government pressure on supply has driven up demand.

● New laws threaten growers with stronger penalties.

collateral against loans, thus taking them off the market to decrease supply. While the government does not pay individual farmers for marijuana that it obtains, the commodity is usually removed from the marketplace, effectively reducing supply and supporting the price.

In fact, the government's policy has been so effective in maintaining price supports that the Agriculture Department should expand the program to include other crops. If the government parquatted a few corn or wheat fields, the price of these farm products would shoot up.

Although many farmers would forego planting these crops, some adventurous guerrilla farmers would try to grow at least a few furtive rows between their tobacco and soybeans. Total production would go down after the program was introduced and farm prices would rise. Those farmers willing to take the risk would receive a living wage.

Small family farms would probably be better positioned to take advantage of the new policies, so the family farm would

eventually end up owning the works.

The new drug laws were supposed to enable the DEA to go after large commercial suppliers. However, it has not worked that way. In Sioux Falls, South Dakota, a guy with a few shoplights in his basement illuminating a total growing space of 25 square feet was charged with manufacturing (cultivating) with intent to distribute. The jury found him guilty of manufacturing. The government has a lien on his house.

In rural Michigan, a fellow with a lean-to greenhouse attached to his house was cultivating an area 2' x 12', a total of 24 square feet. Narcs busted him and may try to seize his entire farm. The narcs say, "Why go after the big guys and possibly get into trouble or be exposed to danger when we can make these small busts, which are easier to coordinate and more likely to go to trial?"

Let this article serve as a warning to all who contemplate any illegal activity. The federal government is trying to make the laws so harsh that you will not be tempted to cultivate or to distribute

the police after they received an anonymous tip. In all probability, the informer was a "friend" who was pissed at the grower. Hard as it is to believe, the grower knew the fink had informed on someone else he was pissed at before. Still, the grower showed him the garden. "He wasn't mad at me when I showed it to him, so I didn't think he would inform on me." To corroborate the fink's information, the police had a social worker speak to the couple's eight-year-old child in the school. They asked him if his father was growing plants in a room downstairs. On that basis the police obtained a search warrant.

The grower was not arrested during the raid by the local police. After they took the garden—plants and lights included—they asked the grower to meet them at the police station. Two members of the local police were there, along with a DEA agent. He was not read his Miranda rights because the police said that they were not planning to arrest him then, just to question him. He admitted cultivating

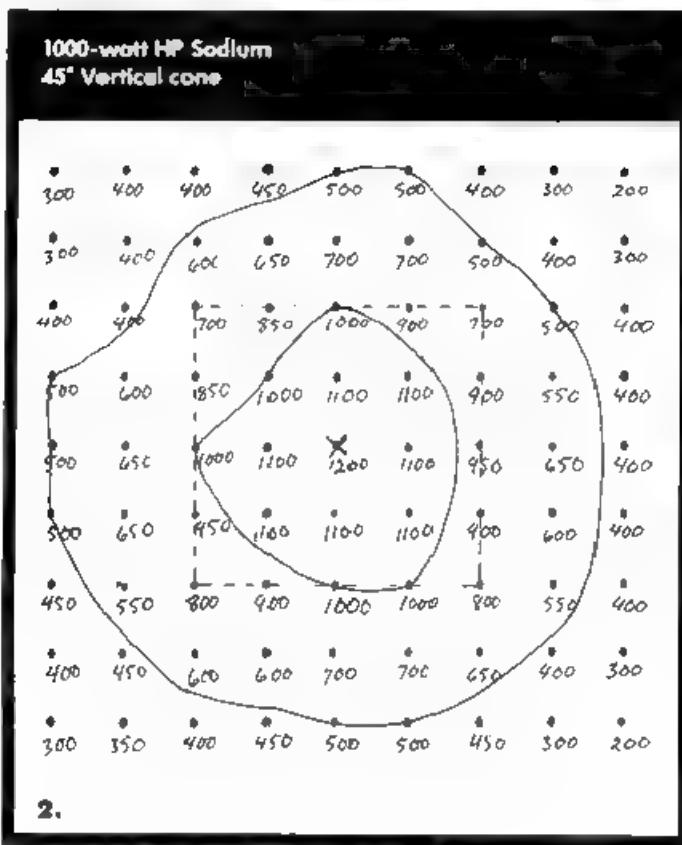
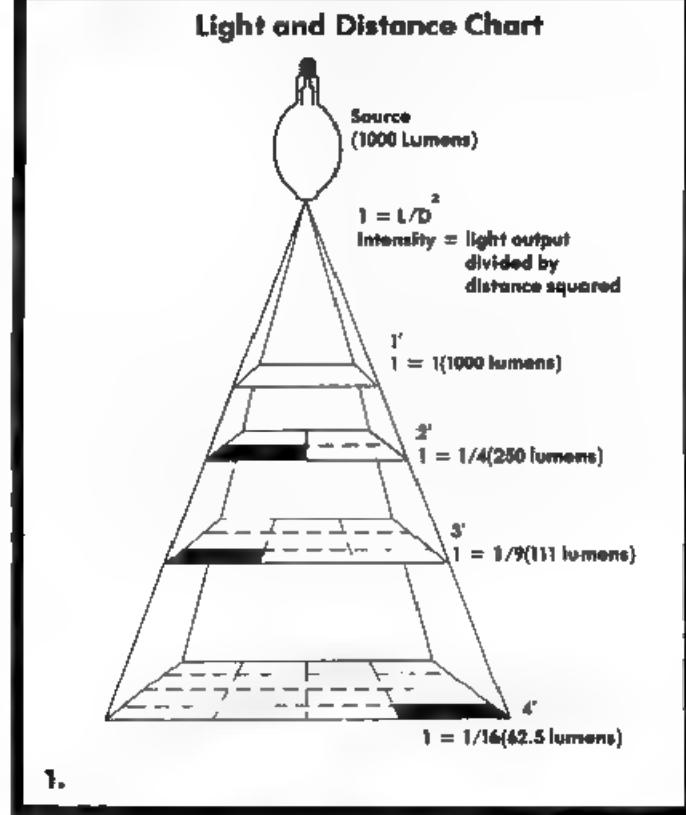
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HIGH TECH, HIGH LIGHT

BY JORGE CERVANTES

One question that has been on the minds of indoor growers since they first saw HIGH TIMES' photographs of greenhouses and grow rooms from Holland is: How can the Dutch use 400-watt lamps and get the same (or better) results than American growers using the 1000-watt lamps? The answer is simple: horizontal orientation of the bulb and a small reflector. This setup is just that much more efficient.

LIGHT is one of the five basic necessities a plant needs to grow. The other growth-inducing factors—air, water/nutrients, heat, and a growing medium—are generally easy to learn about and easy to control. But only marginal information is available about light for the hobby gardener. Until recently, there was not much need to study light, but High Intensity Discharge lamps have made the study of artificial light very popular.





ABOVE: The 40° Parabolic hood is a good choice for a small garden.

LEFT: The horizontal HP sodium takes the cake for overall efficiency.

How much light do plants need? Seedlings, clones, and vegetative planes thrive at low-light levels: 500 to 1500 footcandles. One grower uses a MS1000-watt super metal halide hung 4' above the plants in an 8' x 8' room to grow a very healthy crop. The garden has absolutely no trouble achieving rapid growth.

Flowering, however, is another matter. Depending on variety, a light intensity of 1000 to 2500 footcandles is needed to produce strong healthy flowers.

High light intensity is needed for lowering plants but light intensity diminishes rapidly. Very short plants perform the best. In fact, the highest yields that I ever heard of have come from planes that were no more than 12"-18" tall at harvest. These plants are grown on 4" to 6" centers in a "Sea of Green" method (See p. 44, HIGH TIMES October 1985.)

The most basic and important fact to remember about artificial light is that intensity diminishes to the square of the distance. In simple language, artificial light fades fast. The further away from the light source (bulb), the less light available. This is the most critical factor at play when employing a grow light. (See light and distance chart No. 1.)

Given this information as a constant, we know that the further light travels from its source, the less intense it is. The closer the

reflector is to the bulb, the more intense the light will be when it is reflected. For example, if the reflector is 1' from the bulb, the light that is reflected will be four times more intense than if the reflector were 2' away.

To demonstrate these simple premises, I constructed a black room to measure light. It is 10' x 10' square with an 8' ceiling. The walls are painted flat black; the floor is covered with black tar-paper. On the floor, on 12" centers, within an 8' x 8' matrix, a light-colored dot is marked. The flat black paint and black tar paper floor reflects a maximum of 3 percent light. This small percentage of reflection facilitates consistent light measurements.

There are many methods and scales by which to measure light. Watts-per-square-foot is the most common—and the most inaccurate. This method simply divides the lumen output of the bulb by the square feet of the illuminated surface. Using watts-per-square-foot, a 1000-watt bulb will always supply the same amount of light regardless of the efficiency of the reflector or orientation of the bulb. The most accurate mode of measurement for our purposes is footcandles. One footcandle is equal to the amount of light that falls on one square foot of surface located one foot away from one candle. A precise reading of the amount of light that reaches the garden

can be taken in footcandles and exact comparisons can be made.

The first series of tests concentrated on a 1000-watt high pressure (HP) sodium lamp. The HP sodiums will operate in any position, 360 degrees, and retain optimum efficiency. The 1000-watt HP sodium lamp that was used in the tests had burned about 100 hours so that the gasses in the arc tube could stabilize before the tests were initiated. All of the tests were conducted with a Sylvania bulb. All three of the lamps' reflectors were painted the same shade of white.

The closer the lamp to the garden, the more intense the light will be in the center and the less intense the light will be around the perimeter. The further away the lamp is from the garden, the more even the light distribution, but the less intense the light. All tests were done with the light hung at 3'.

The tests were simple and straightforward. First, the lamp and reflector were hung at a height of 3' from the lowest point on the bulb to the floor. The height of three feet was chosen because the light distribution was most even and remains the most consistent within the 8' x 8' test area. When the lamp was hung at two feet or less, the light was extremely concentrated below the bulb in a 4' x 4' area, and

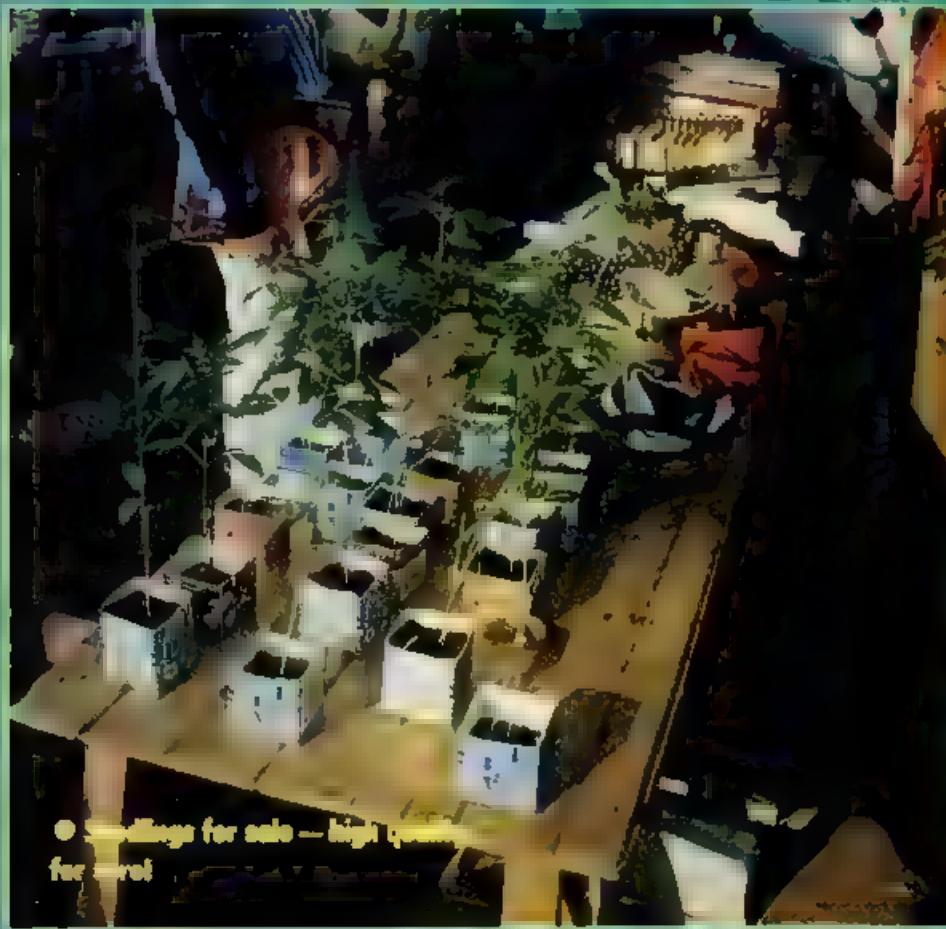
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OUT
DA
1987

100% Natural
100% Organic
100% Vegan
100% Fair Trade

Brace yourself, the 80s are back. The 1980s were a time of excess, decadence, and partying. From the neon-lit clubs to the music videos, the 80s were a time of fun and frolic. So why not embrace the spirit of the 80s and have a blast? Whether you're a fan of the music, the fashion, or the culture, there's something for everyone in this decade. So get out there and let's celebrate the 80s in style!





• High Brew beer (note the logo by HIGH TIMES' own John Holmstrom).

kept law and order in ways.

Despite the throngs of party-goers and the general absence of uniformed police, very few incidents occurred. Queen's Day is an event where everyone is on the loose, but it's a very peaceful one. This year, there was not even any trouble at all. Queen's Day is truly a high time! *

OUTDOOR GARDEN
OF THE MONTH



— Sweet dreams from "THE BU"
Marina Del Rey, CA

ASH ED

THE ROSENTHAL

THANX
333
TUES.

SPECIAL HARVEST AWARD

I may not make Bud or Garden of the Month, but I have the Message of the Month, all from a \$3.95 (cheap!) mag. Just 65 days from clone to stone. Thanx again!

— D & D
South Bend, IN

PLANT OF THE MONTH



Skunk clones under a 1000-watt HPS Great Smoke!
— Moose
Blue Hills, MN

INDOOR GARDEN OF THE MONTH



I retired from growing outside six years ago because of rip-offs. This year a friend of mine was looking for a place to hang his MH. Without much faith, I agreed to set up a room. By the end of the first month, my enthusiasm increased. By month two, I was a genuine believer.

All through the growth cycle things were great, but a week after we started the flowering cycle, I discovered an advanced infestation of spider mites. We lost five females and countless branches. Not wanting to give up on the whole crop, I found a recipe for a solution of buttermilk and wheat flour mixed with water. After two weeks of spraying every few days, I found no further traces of the little S.O.B.s. The plants regained their health and produced some fine, skunk buds with a high to match.

— Stormin' and Buckets.
Lockport, NY



This is my crop of a single sativa. It was grown organically. The plant was seven months old at harvest. A 12-hour photoperiod was induced because the plant was getting too big. I used about 100 weights and strings to tie it down and pruned it continuously. This photo was taken shortly before the main harvest. The smoke was very impressive. From the fertile valley of the rainbow,

— Mr. P.P.
Chilliwack, British Columbia, Canada

● Light is one of the most important—and most complex—factors in indoor growing. In this month's "Ask Ed," Associate Editor Ed Rosenthal answers questions about light and lighting equipment.

Dear Ed,

My grow room is 13 square feet (2'5" x 5'2") and 8' in height. My question is how to illuminate the room. Should I use two lights, a 175-watt MH and a 150-watt HPS, or a single 400-watt MH or HPS?

—J. Bud
Springfield, Missouri

I would use a single 400-watt HPS. It provides more light usable by the plants.

Dear Ed,

I've been trying to grow some pot recently, but just as soon as the plants get started they flop over and die. The stems seem too weak to support them. I am using an incandescent grow-light. What's the matter?

—Hopeless Case
Lynchburg, Virginia

Dear Ed,

I am growing six plants in a closet 3' x 2'. It is 5' high at the shelves. The plants are one month old and 12"-14" tall. I am using a 75-watt incandescent grow-bulb, which is working well. Can I get by with a few of these, or should I invest in some HPS security lights?

When should I start to bud the plants?
—The MOTA MAN

Miami, Florida

Dear Ed,

Being poor college students, we here at U.S. Santa Cruz can hardly afford a well-equipped grow room. Consequently, we have resorted to 150-watt incandescent grow bulbs in our closets.

The resulting plants are weak, lanky, branchless, and have an extremely long internodal length. Is this the result of the lights? Would fluorescents be better? How about fluorescent tubes placed vertically around the plants?

—Anonymous
Santa Cruz, California

The plants are getting a combination of red and far-red light, which promotes stem elongation. Incandescent lamps provide light mostly in the yellow, orange, red, and far-red spectrums. The incandescent grow-light filters out some of the far-red for sturdier stem growth and less stem elongation.

There are several different lights that you could use. A 150-watt HPS or

175-watt MH would provide more than enough light. Fluorescents are also a possibility. If the area is too small to use 4' fluorescents, you could use a bank of 8"-diameter circular fluorescents mounted on a board overhead. Fluorescents could also be mounted vertically against the wall.

Fluorescents and low-wattage HID lamps can usually penetrate the foliar canopy to a depth of 4"-6". Tall plants do not produce much more than short plants under these circumstances. Before the plants have formed too dense a canopy, such that light does not penetrate below the tops, the plants are ready for flowering.

The plants need be no more than a foot tall before forcing flowering. They will grow to a height of about 2 1/2". When plants are grown this way, two to nine plants are used per square foot, so that the garden quickly fills with vegetation.

Dear Ed,

My grow space is limited to 2' x 5' and is 4' high. I've got four banks of fluorescents, and use Gro-lux and daylight tubes, but it is not enough light and there is no more room. What can I do?

—Stopped Short
Susquehanna, Pennsylvania

Try changing your tubes to ones that are more efficient at emitting light in the red and blue spectrums. Although the gro-tube fluorescents emit light mostly in the red and blue spectrums the plants can use, they do not emit as much light (up to 2/3 less total light) in these spectrums as ordinary warm- or cool-white tubes. Daylight tubes emit plenty of blue light, but not much red, which is the plants' main source of energy.

Use a combination of cool-white and warm-white fluorescents and the plants' growth should improve.

Dear Ed,

I have a closet 6' x 2' and 7' high. I would like to know how many fluorescent lights with good reflectors would be sufficient for this small area?

—Busted and Disgusted
Wichita Falls, Texas

Plants growing under fluorescents should receive a minimum of 20 watts per square foot of space. Your garden is 12 square feet. It should be illuminated by a minimum of 240 watts of electricity. Each 4' tube uses 40 watts of power. A minimum of six tubes is required. If each were an energy-efficient 40-watt with the proper fixture the total light emitted would average 17,760 lumens. A single 150-watt HPS lamp emits 14,400 lumens average, and a 250-watt HPS emits up to 27,000 lumens average. The fluorescents emit only about 2/3 the light that a low-watt HPS does.

Dear Ed,

I am confused. With all these different lights on the market, what should I get to illuminate my garden? I would like to get into indoor cultivation with as little money as possible. What should I do? Should I use a screw-in grow-light, tungsten halogen, mercury vapor, fluorescent, metal halide (MH), high pressure sodium (HPS), or low pressure sodium (LPS)?

—Latent Grower,
Sioux City, South Dakota

Incandescent lamps are inexpensive and easy to install, but they are very inefficient users of electricity. They have an average rated life of about 1000 hours. Most of the light they emit is in the yellow to red spectrum, useable by the plants. But the combination of red and far-red light they emit promotes stem elongation and small leaves. Incandescent grow-lights have filters which eliminate some spectrums of light from the beam, especially the far-red, but the filtered light is not converted to more useable spectrums. These lights are no more efficient than regular incandescents, but they do stop stem elongation for the most part. When incandescents are powered by a current of voltage higher than they are rated for, they burn considerably brighter, but their life is also reduced.

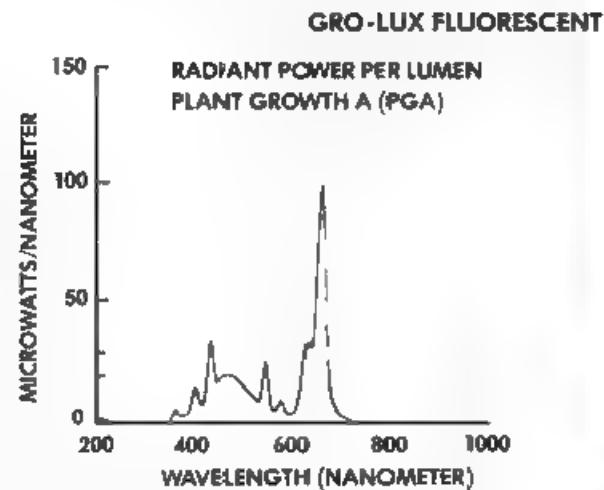
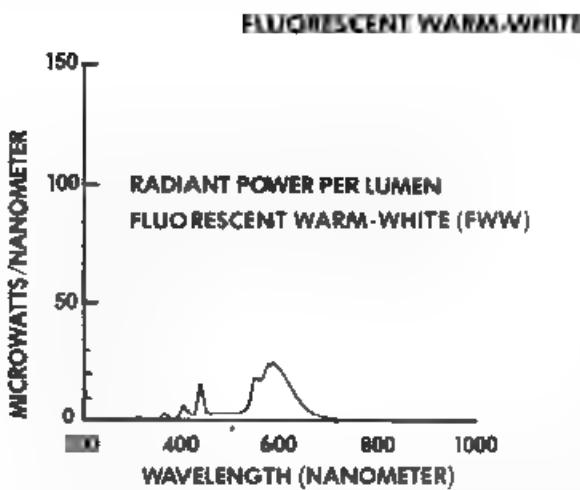
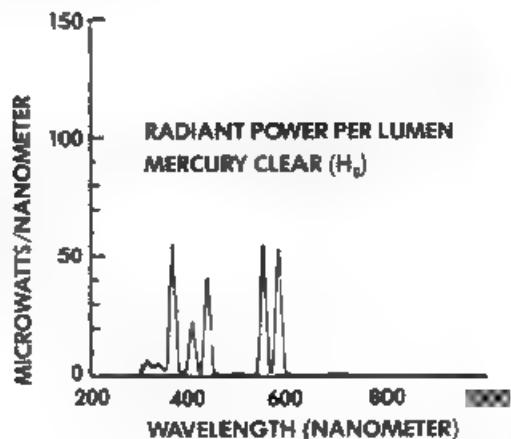
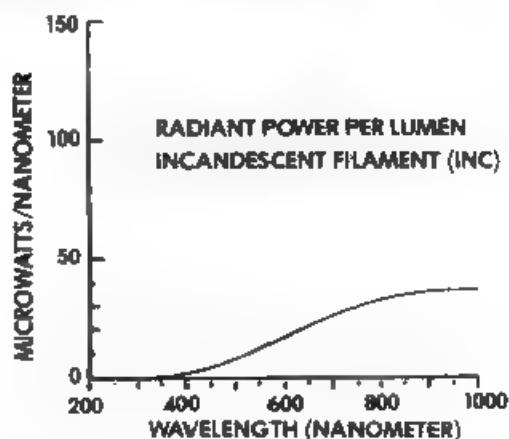
Tungsten halogen lights are another form of incandescent with a spectrum that includes more blue light, so they are better balanced for plant growth. However, they are just as inefficient as regular incandescents. Some companies sell an improved efficiency lamp that is 50 percent more efficient than regular tungsten halogen lamps.

Fluorescent tubes come in many spectrums, some of which are very

continued over

INCANDESCENT

MERCURY STANDARD



PLANT AND ELECTRICAL LIGHTING SPECTRUM ANALYSIS

good for plant cultivation; each spectrum has a different efficiency of light emission. The tubes most commonly used for gardens are either 4' or 8' feet long. Fluorescents are usually inexpensive, are fairly efficient energy users, and are readily available. Their drawbacks are that they are fairly bulky and do not emit great amounts of light, so that rows of tubes are required. Several companies now sell fluorescents that are more efficient than standards, using the same amount of electricity to emit more light. Tubes with better spectrums for plant growth are also being marketed; these are usually sold as premium tubes.

The high-output and very-high-output fluorescent lamps that are now available emit more light than standard fluorescents but use more electricity, and are therefore much less cost-effective. "Energy saving" models are also less efficient than the

standard HO and VHO models, they do use less current, but emit less light.

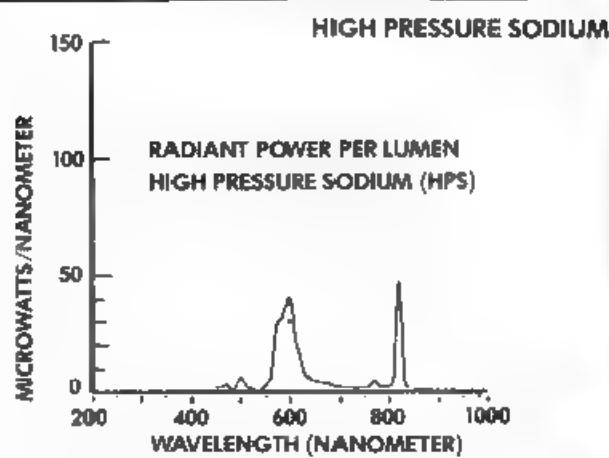
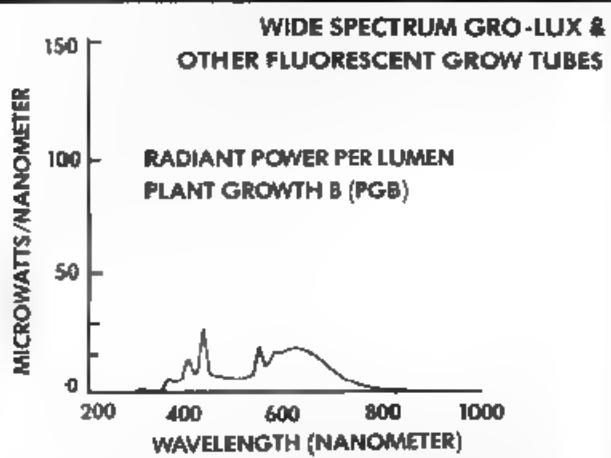
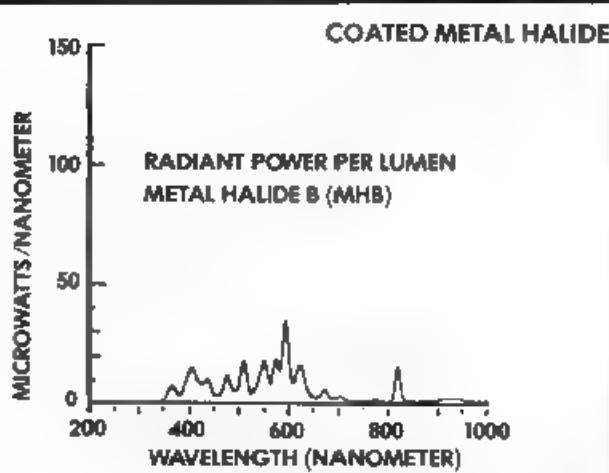
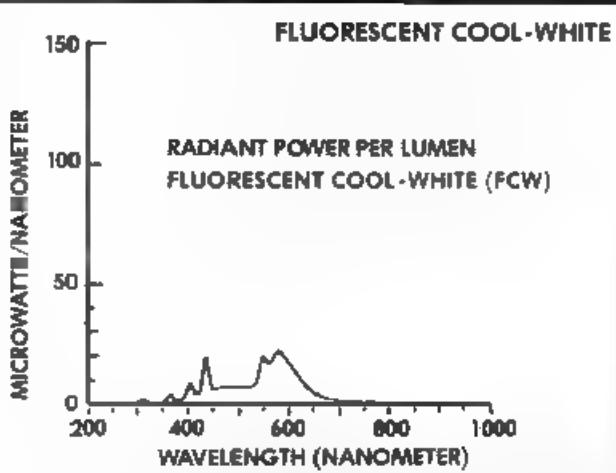
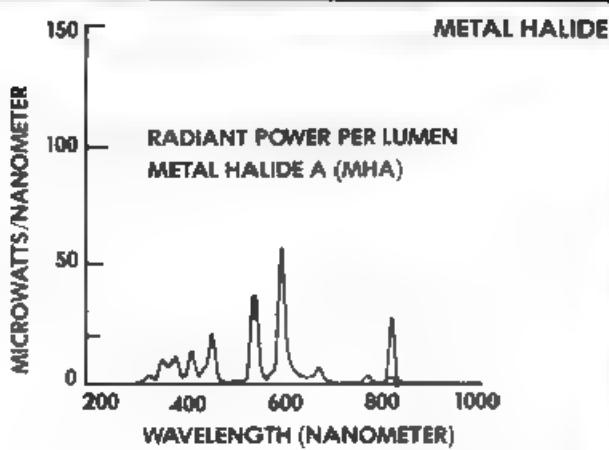
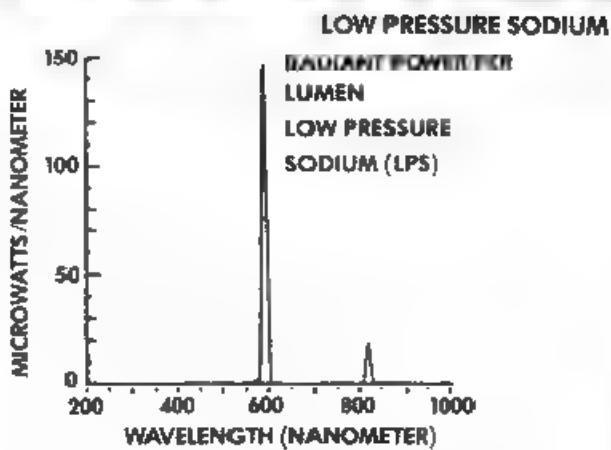
Fluorescent tubes are best used for germination, rooting cuttings, and in gardens where they do not have to penetrate a canopy of more than six inches. They can also be used in creative ways to deliver light to the plants by placing them in the middle or around the perimeter of the garden rather than overhead, so that light reaches spaces that it ordinarily could not.

Mercury vapor lamps come in various spectrums, similar to fluorescents. They are not very efficient producers of electricity. The ballasts can be fitted with metal halide lamps that are specially made for use in mercury fixtures. These replacement lamps are as efficient as standard MH lamps.

MH lamps are fairly efficient sources of light, and have a spectrum that promotes healthy growth. MH lamps are

easy to install and maintain because the heavy ballasts (transformers for our purposes) are usually remote from the lamp and the reflectors are lightweight; they are excellent promoters of vegetative growth, and are also useful for germination and cuttings. However, flowering is not "emphasized" with these lamps.

High pressure sodium (HPS) lamps look pink or amber and emit most of their light in the yellow, orange, and red spectrums. They are a very efficient source of illumination. They are also easy to hang, as they come with remote ballasts and relatively light lamp fixtures. HPS and MH ballasts are not interchangeable; however, the light fixtures are. Converting from a MH to a HPS means that a HPS ballast has to be plugged into the lamp fixture and a HPS lamp screwed into the socket. HPS lamps promote stocky stem growth, deep green leaves, and delay flowering slightly. Except for germination and cuttings, where they



PLANT AND ELECTRICAL LIGHTING SPECTRUM ANALYSIS

do not seem quite as effective as fluorescents and MH lamps, they are the best source of illumination for growth and flowering. Contrary to claims by some light manufacturers, they can be used without any other light source. There is absolutely no reason to mix them with MH lamps.

Low pressure sodium (LPS) lamps are the most efficient source of electrical lighting available. The LPS fixture looks something like a fluorescent

shop light. Virtually all of the light they deliver is in the orange range, from 680nm-690nm. Although this is not light that the plants can use most efficiently, it can be used by the plants. However, for proper growth the plants must also receive other spectrums of light, which they use to regulate their metabolic processes. For this reason, the lights are best used as a supplement to other lighting sources, whether natural or artificial.

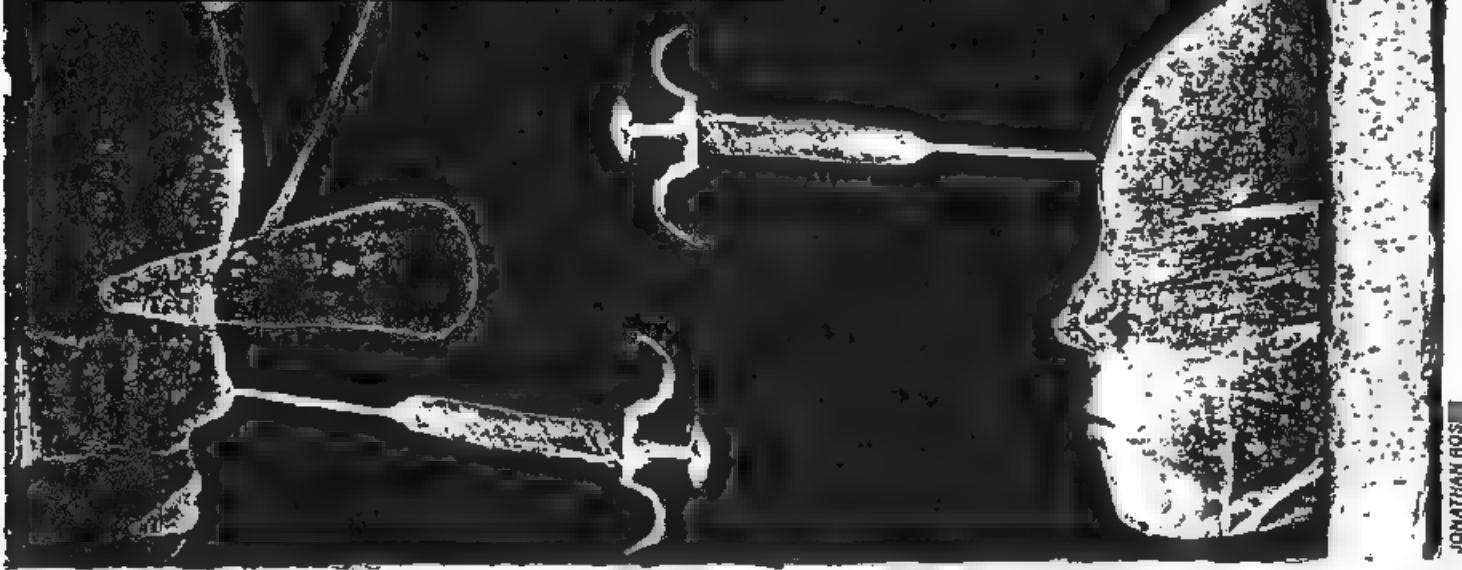
Dear Ed

Will a 25-watt colored incandescent bulb throw off the flowering cycle? I have been told that a green bulb will not affect flowering.

—Ra Chen
Kalamazoo, Michigan

A green photographic safe-light will not affect the photoperiod response. It is affected by the red, far-red, and blue spectrums.

continued on page 71



JONATHAN FROS

continued from page 36

operations. According to an affidavit filed by the Christic General Counsel, Daniel Sheehan, the profit from a drug-smuggling network organized by contra supporters who were Bay of Pigs veterans "was being used to help finance the purchase of military equipment, ammunition, and explosives needed by the Contras to wage their private war against the Sandinista government."

The political goal of this Cuban "secret team," and of at least some of its American handlers, has always been the overthrow of Fidel Castro. This political agenda has given them priorities different from those of any American president, Democrat or Republican, who has wanted to explore any degree of detente with the Soviet Union. This explains why so many in the Cuban team have turned for support to other right-wing governments like Argentina and Chile, whose own international intelligence operations have been financed by the same narcotics traffic.

Today, the two most prominent members of this second team are the Cubans in charge of loading the ill-fated Hasenfus supply plane at the Ilopango air base in El Salvador: Felix Rodriguez (alias "Max Gomez") and Luis Posada (alias "Ramon Medina"). But they are working in the contra supply operation with other ex-CIA Cubans, who have been recruited through Brigade 2506, the Bay of Pigs veterans association. Its president, Juan Perez Franco, who in 1985 made Brigade support for the contras official, is the same president who a decade earlier brought the Brigade to publicly support acts of terrorism.

One year later, in June 1976, Posada and Perez Franco, along with the Brigade's new president, Roberto Carballo, and its military chief, Armando Lopez Estrada, attended the small ten-man founding meeting of CORU, a 1976 Cuban terrorist alliance supported by the fascist governments of Chile and Argentina. The *Wall Street Journal* reports Estrada as saying that "on the instructions of a US official in Costa Rica," he recruited Bay of Pigs veterans to advise the contras on the Costa Rican southern front.

In retrospect, it is obvious that some if not most of CORU's terrorist operations were financed from the drug traffic. CORU interlocked with, and was funded by, the Miami-based World Finance Corporation (WFC), set up in 1971 by a Brigade 2506 veteran,

Guillermo Hernandez Cartaya. The House Select Committee on Narcotics Abuse and Control later agreed with a local assistant US attorney that WFC's activities included "political corruption, gunrunning, as well as narcotics trafficking on an international level."

The WFC had good relations with both the Washington establishment and, reportedly, the Mafia. One of its six founding stockholders and directors was Washington attorney Walter Sterling Surrey, a veteran of OSS. According to the Drug Enforcement Administration (DEA), one of his WFC associates was an alleged narcotics wholesaler and member of the Trafficante Mafia family. In 1981, after WFC had collapsed, Cartaya was convicted and sentenced to five years for income tax evasion. His successor as "godfather" of the Miami narcotics traffic was another Bay of Pigs veteran, Jose Medardo Alvero Cruz.

Like Rodriguez and Posada Duney, Perez Alamo and Nestor "Tony" Izquierdo were not average members of Brigade 2506; they were members of a much smaller elite of specialists trained in sabotage and other black arts. At least three members of this inner elite, or S-Force, also were in touch with the renegade ex-CIA agent Ed Wilson.

This S-Force had its origins in the 80-man force of sabotage teams given special training in Panama and Florida for infiltration into Cuba at the time of the Bay of Pigs. According to Warren Hinckle and William Turner, many of these Cubans had been recruited from the ranks of the International Anti-Communist Brigade (IACB), a tattered private army funded chiefly by the dispossessed Havana casino owners with Mafia connections, and recruited and trained by the future Watergate burglar Frank Sturgis. These origins may explain why so many of the S-Force members ended up taking over the narcotics traffic that had once been associated with the Havana casinos.

Members of this smaller S-Force have been used for illegal purposes from at least 1971, when Howard Hunt attended the Brigade's tenth anniversary meeting to recruit some of the future Watergate burglars for the Nixon White House "plumbers" or "counter-intelligence" break-in teams.

continued on page 85

CO₂

continued from page 43

HOW TO DO IT

Thoroughly wash the containers to be used. Then rinse with a solution of one cup bleach mixed in a gallon of water, a sterilizing agent. Then rinse thoroughly with plain water. Add the sugar and yeast nutrient to the container. Pour boiling water into the container until it is nearly full. Stir until the sugar is dissolved, then cover.

When the temperature goes down to about 90 degrees, add the yeast and set the airlock in place. You do not have to use a whole package of yeast to start a brew. Even the tiniest pinch is enough, since each pinch contains thousands of tiny, one-celled yeast plants. But the more yeast, the faster the brewing becomes vigorous.

Within hours you will see the bubbles vigorously flowing. That is the CO₂. When the bubbling stops, the yeast have finished their feast.

As the amount of CO₂ in the air is increased, the plant's rate of photosynthesis—and thus, its growth—will rise in a direct ratio to the added amount as long as there is enough light, water, and nutrient to support the faster growth rate.

The air contains about .03 percent CO₂. This is soon depleted in a grow space where there is no good circulation. The space can be productively enriched with CO₂ up to the rate of about .2 percent.

To find out how much CO₂ is needed to replenish the space every 24 hours, find the cubic dimensions of the area (height x width x length) and multiply by .008 (.002 x four replenishments).

For example, a room 13' x 18' x 12' contains 2808 cubic feet: 2808 x .008 equals 22.4 cubic feet of CO₂. Divide this by 8.7 to find out how many pounds this equals: 2.57 pounds of gas. Multiply this by 2.05 (number of pounds of sugar required to make one pound of CO₂) to see how much sugar is required. About 5.3 pounds of sugar is required each day. This can be brewed in about 3½ gallons of water.

Since the gas is released over a three- to four-day period, only 1/3-1/4 of the gas is released each day. To get the full amount of gas supplement, a new container of brew is started each day. After the second day, the fermentation enrichment operation will be at full gas. ●

CO₂ SUPPLEMENT



MA SUPER
CO2-1000
1000 ml
1000 ml
1000 ml



MA SUPER
CO2-100
100 ml
100 ml
100 ml



MA SUPER
CO2-500
500 ml
500 ml
500 ml



MA SUPER
CO2-250
250 ml
250 ml
250 ml

package of
100: \$ 9.95
100: \$ 9.95



MA SUPER
CO2-50
50 ml
50 ml
50 ml



MA SUPER
CO2-25
25 ml
25 ml
25 ml



MA SUPER
CO2-10
10 ml
10 ml
10 ml



MA SUPER
CO2-5
5 ml
5 ml
5 ml



MA SUPER
CO2-1
1 ml
1 ml
1 ml

package of
25: \$ 5.95
100: \$ 12.95
100: \$ 12.95



MA SUPER
CO2-1000
1000 ml
1000 ml
1000 ml



MA SUPER
CO2-500
500 ml
500 ml
500 ml



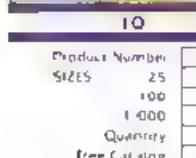
MA SUPER
CO2-250
250 ml
250 ml
250 ml



MA SUPER
CO2-100
100 ml
100 ml
100 ml



MA SUPER
CO2-50
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50 ml
50 ml

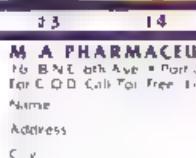


MA SUPER
CO2-25
25 ml
25 ml
25 ml

#10-15
package of
25: \$ 6.95
100: \$ 14.95



MA SUPER
CO2-10
10 ml
10 ml
10 ml

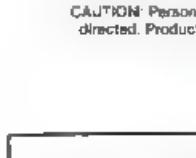


MA SUPER
CO2-5
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5 ml

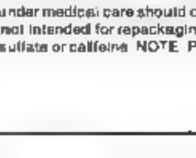


MA SUPER
CO2-1
1 ml
1 ml
1 ml

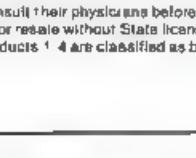
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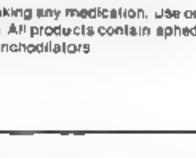
MA SUPER
CO2-1000
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1000 ml
1000 ml



MA SUPER
CO2-500
500 ml
500 ml
500 ml



MA SUPER
CO2-250
250 ml
250 ml
250 ml

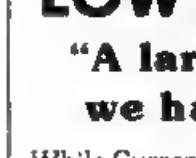


MA SUPER
CO2-100
100 ml
100 ml
100 ml

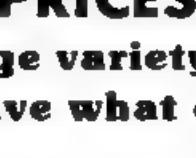


MA SUPER
CO2-50
50 ml
50 ml
50 ml

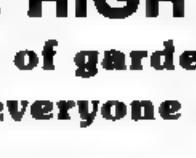
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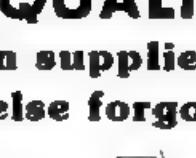
MA SUPER
CO2-25
25 ml
25 ml
25 ml



MA SUPER
CO2-10
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MA SUPER
CO2-5
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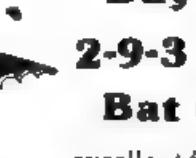


MA SUPER
CO2-1
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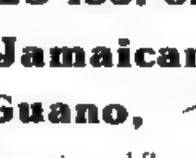
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MA SUPER
CO2-1000
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MA SUPER
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MA SUPER
CO2-250
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MA SUPER
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MA SUPER
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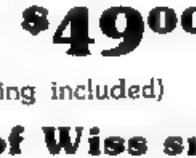
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MA SUPER
CO2-25
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MA SUPER
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MA SUPER
CO2-5
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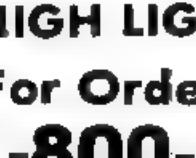


MA SUPER
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MA SUPER
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MA SUPER
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MA SUPER
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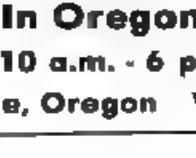


MA SUPER
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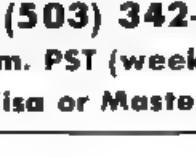
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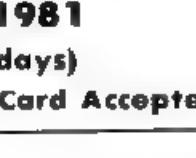
MA SUPER
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MA SUPER
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#10-15
package of
25: \$ 6.95
100: \$ 14.95

MA SUPER
CO2-25
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MA SUPER
CO2-10
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10 ml

MA SUPER
CO2-5
5 ml
5 ml
5 ml

<img alt="Bottle 108: MA SUPER CO2-1" data-bbox="755 2140 875 22

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We have some of the most potent and resinous varieties in the world, including **NORTHERN LIGHTS**, **BIG BUD**, and **SKUNK#1**. Also, we now have super quality **RUDERALIS** hybrids, proven to be the earliest varieties known to mankind. Every grower can benefit from our collection.

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COLOR CATALOG, PRICE
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THE NETHERLANDS



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QUALITY CANNABIS SEEDS**

continued from page 67

Dear Ed,

I recently obtained a MH lamp with its ballast enclosed rather than remote. It was removed from an old warehouse installation. Can I use this lamp for cultivation?

—Steve

U.S.A.

Yes, the lamp can be used. The enclosed ballast makes the unit bulkier and harder to mount since it is fairly heavy. The ballast may be removable from the lamp fixture; a heavy-duty electrical line could be used to hang the fixture remotely.

Dear Ed,

I have a copy of the **HIGH TIMES** Encyclopedia, published in 1978. In the chapter on growing pot it says that marijuana can absorb up to 60 watts per square foot. Is this true? Is that amount of light necessary for maximum indoor growth?

—Eagle

West Virginia

The article was referring to fluorescents. A cool-white fluorescent emits about 3000 lumens of light, or about 800 per linear foot. Some of this light is lost to the reflector but for our purposes, let's say that all the light is delivered to the garden. The tube emits 750 lumens per linear foot. A 20-watt-per-square-foot system delivers about 1500 lumens. A 60-watt unit with 100 percent efficiency delivers about 4500 lumens. This is not too much light for the plants. They will grow very compactly with dense, tight buds.

A 40-watt-per-square-foot system would probably be easier to set up since it would be hard to line up six tubes per foot of width.

Dear Ed,

I have a garage grow room that measures 15' x 13' (195 sq. ft.). It is illuminated by one 1000-watt MH and two 400-watt HPS. In addition, on the walls about 2' from the floor I have a total of eight fluorescents all the way around. Is this too much light?

—Head Stumped

Newark, New Jersey

A clear MH emits between 105,000 and 115,000 lumens initially. The two HPS lamps emit a total of 140,000 lumens each, or 280,000 lumens, the 8' fluorescents emit about 5500 lumens each. The light emitted by the fluorescents therefore totals about 44,000 lumens. The amount of light emitted is 435,000 lumens, or 2230 lumens per square foot. The plants can take it.

continued over

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Our new MH175, with a metal halide lamp is perfect for all stages of plant growth. Only 18¢ a day to run.

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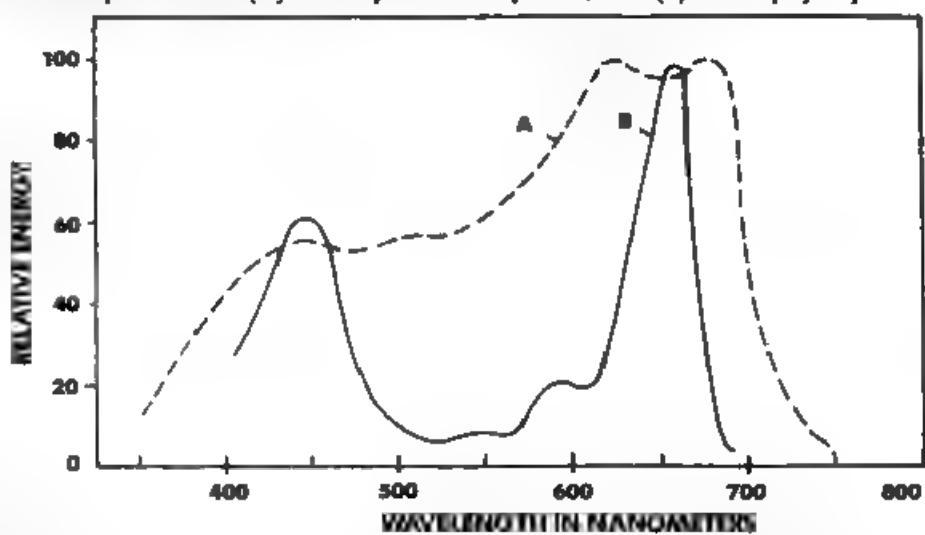
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A - S - K - E - D

continued from previous page

Action Spectrum of: (A) Photosynthetic Response, And (B) Chlorophyll Synthesis



Dear Ed,

I am afraid my electric meter is moving too fast. Would it be possible to use either bottled or white gas to provide light as well as heat and CO₂ to my garden? How much light would be generated?

—Anonymous
U.S.A.

There has been very little work done on either the spectrum or efficiency of direct illumination using LP or natural gas, oil or white gas. I checked with various institutes and in illuminating research journals before I found any kind of answer to this very important question.

Finally I spoke with a researcher at the Coleman Co. who had checked the spectrum himself. Using a 21A mantle and either propane or white gas, he found that the light spectrum forms a bell curve with the apex at about 560 nanometers.

Significant amounts of light fall within the spectrums most useable by the plants. In Graph A, chlorophyll synthesis and the photosynthetic response of plants are listed along with the spectrum curve of the 21A mantle. The blue, orange, and red spectrums of light are used very efficiently by the plants. The yellow is used somewhat efficiently. Most of the light in the green portion is not used efficiently by the plant.

Chlorophyll synthesis is the manufacture of chlorophyll by the plant, for which light is needed. A plant which is placed in a dark environment for a few days starts to lose its green color as its chlorophyll deteriorates. When the plant is placed back in a lighted envi-

ronment, it uses the light energy to manufacture new chlorophyll. The plant uses light energy in two fairly sharp peak zones to provide energy for the construction of the chlorophyll molecule. These are 650nm in the red zone, which is the main power source, and 445nm in the blue spectrum.

Photosynthetic response occurs when the chlorophyll is exposed to light. In a complex series of chemical reactions, carbon dioxide (CO₂) from the air and water (H₂O) absorbed by the roots are combined to form sugar. The reaction can be summarized as 6(CO₂) + 6(H₂O) + light energy = C₆H₁₂O₆ = 6(O₂). Photosynthetic response has a peak (absorbs light most efficiently) at 435nm (blue) and then climbs a gentle curve to a more active peak at 675-700nm (red). Significant amounts of green, yellow, and orange light are also absorbed by the plant to fuel this reaction.

The amount of inefficiently used light emitted by the 21A mantle seems to be close to the amount emitted by a cool-white fluorescent tube. In fact, their spectrums are not too dissimilar (except that the CW has a small peak in the blue region).

The Coleman Co. researcher mentioned that there has been some interest in using natural gas for the direct generation of light for plant growth but he could cite no studies on the subject. Whether or not gas light can be used as a single source for plant growth remains to be seen. However, it is definitely possible to use the light as a source of illumination with a supplementary source of blue light.

This "new" source of light requires

a lot of research before it can be used with confidence by the home hobbyist. What is the greatest lumen output that a lamp can generate? How can the lights be switched on and off automatically? How should the lights be spaced? Are there appliances designed for the safe use of this source of illumination?

Dear Ed,

We are growing four plants indoors. Unfortunately, the environment is rather a dusty one. Will an accumulation of dust on the plants' leaves affect their growth in any way?

—Two Guys and Their Plants
Rochester, New York

Yes. The light is blocked by the dust so the plants receive less of it. The dust may also clog up the stomata (leaf pores) and make it harder for the plants to come in contact with the CO₂ in the air. Both these things slow down the plants' rate of growth.

For better results, wash the dust off the leaves.

Dear Ed,

Which side of aluminum foil should I use?

The Bud Man
Hartford, Connecticut

Dear Ed,

I was wondering if glass mirrors make good reflectors?

—Centerfold Lover
Franklin, New Jersey

The bright side of aluminum foil reflects light in a series of hot spots. Some plant parts receive reflected light, some do not. The dull side disperses the light as it reflects it, so that the reflected light is distributed more evenly.

When foil is mounted tightly on a wall, the reflection is relatively stable, so that some areas always receive more reflected light than others. When the foil is just hung and moves to circulating air, the reflection moves so that many areas are occasionally lit by the hot spots.

Quilted aluminum foil disperses the light more than plain, especially on the bright side.

Other materials that can also be used as reflective material are styrofoam boards, cardboard painted flat white, Astrotron (a quilted mylarized plastic), mylar, and white plastic.

Mirrors reflect light in hot spots and absorb a high percentage of it, so they are not considered good reflectors.

continued over

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A - S - K - E - D

continued from previous page

Dear Ed,

I believe I've done it. The smallest functional grow room ever! It measures 12" wide and 21" high. For light I use three 18" (15-watt) fluorescent lights in the corners and one 15-watt soft-white bulb. I also have a 6" fan laced into one side which exhausts the hot air while drawing in cool air. The box maintains an average temperature of 79 and 81 degrees. All sides are covered with mylar or foil, and the eight young plants sit on a tray of moist pebbles. I will thin the plants to a total of between one and four for flowering depending on their configuration. Any suggestions?

Cannknowabis
New York, New York

Sounds good to me. Some thoughts: Make sure to put your plants into flowering very early. When the plants are perhaps 8" high they should be flowered. This is harder to do with plants from seeds than with clones, which have more development at the same height. *Indicas* are more compact than *sativas*, with less length between internodes. Another possibility is to keep the plants pruned and trained. Each plant can be kept trimmed, with a defined number of branches which are placed in a pattern by tying to stakes or a fence.

If the plants are high-growing, they can be placed on their sides. The branches and side shoots will start to realign themselves, once again growing up. If the branches get too high, they can be bent horizontally, or even downward.

One gardener, who has a considerably larger garden, trains his plants to grow in only two dimensions using a technique he saw used in grape fields. The grape vine branches are kept tied to fences that run along the rows. Instead, this gardener stretched 2" chicken wire on moveable frames placed approximately 20" apart by the time the plants are flowering. The plants are cloned using overhead lamps. Clones are taken from plants growing vegetatively on the frames. When the clones reach 1' they are placed on the wire, and the frames placed approximately 12" apart. Fluorescents are mounted horizontally between each row, only one light per foot of height during vegetative growth. During flowering two tubes per foot of height are used. Each tube is lit only as the plant reaches its height. The branches are tied to the wire using twist ties. The gardener claims that it is not really that labor intensive. The plants fill the wires, which are 6' high,



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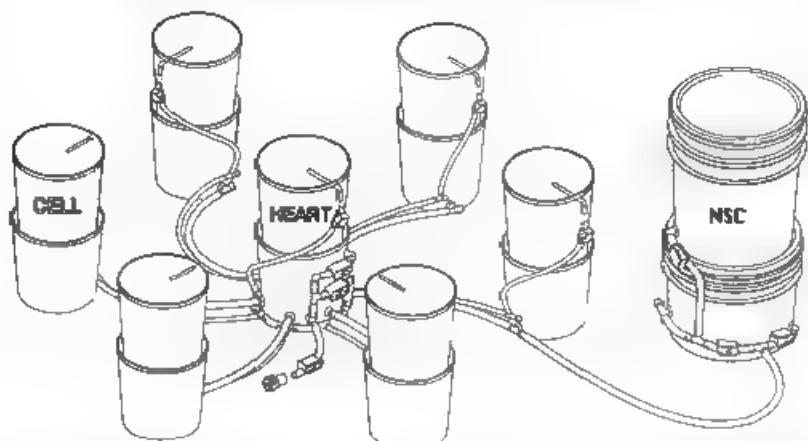
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pretty well. The buds are very large and the grower claims incredible yields per unit of space.

Dear Ed,

An article by S.S.S.C. in the February 1987 **HIGH TIMES** claimed that the more hours of light during flowering, the larger the buds. They suggest trying 10½ hours of darkness at first, and then increasing the dark hours if the plants don't respond. I would like to know if flowering is induced by shorter light time, or by longer periods of darkness. For example, might 14 hours of light and 12 hours of darkness produce bigger buds than a 12-12 cycle? Would a 26-hour day have an adverse affect on the plant?

—Brian

Colombus, Ohio

A stumper. I do not know the answer, but I think that you have a theory that may help to produce bigger buds. Since the plant's flowering is regulated by the length of uninterrupted darkness, and since the plants are receiving their dark period, the program might work.

Some chicken egg farms use a 26-hour day to increase the size of the eggs the hens lay.

Dear Ed,

I have access to a CO₂ tank and regulator, how can I effectively use these without buying an expensive timer?

—Dave

South River, New Jersey

Not very efficiently. A timer and solenoid valve do not cost that much, and there is no other way to distribute the CO₂ efficiently.

Dear Ed,

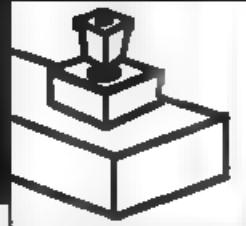
I have read that 24 hours of light raises the percentage of males in a garden, and that putting 24 hours of light on cuttings makes them revert to an earlier stage of growth. Are these statements true?

—Lips

Wichita, Kansas

No to both questions. The "stresses" that cause a higher percentage of males and hermaphrodites are low nutrients, low light, short days early in growth, and crowding. Continuous light has never been implicated in increasing the percentage of males.

S.S.S.C. claims that continuous light causes cuttings to revert to the first stage of growth, starting with one-fingered leaves, increasing to three-fingered, and so on. They say that an 18-hour on, 5-hour off light cycle does not cause this phenomenon. I think that a continuous light cycle increases the growth rate of cuttings and vegetatively growing plants, and does not set them back.



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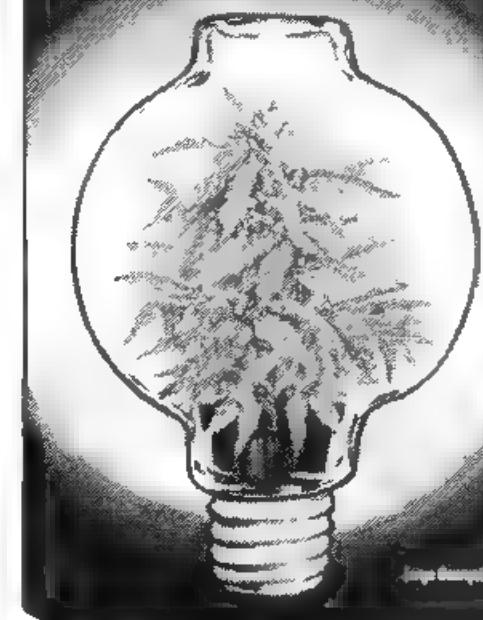
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A S K A Question

continued from previous page

ELECTRICAL LIGHT CHART

Generation of light is just one part of solving the problem of illumination. Delivery of light is the other important factor. Many fluorescent fixtures are designed for very inefficient transmission of light. When light hits the fixture or another tube with no chance of escape, it just generates heat, with little or no light reaching the garden.

For efficient use of all light produced, each tube should have an individual reflector aiming the light to a space where it can be used.

Vertically aligned HPS and MH lamps are inherently inefficient at transmitting light to the garden, and require large bulky reflectors to transport the light. Horizontally mounted lamps are much more efficient at getting the light to a specified area, and only small reflectors are required. MH lamps emit less light when they are mounted horizontally.

TYPE OF LAMP	WATTS	LUMENS (INITIAL)	LUMENS (AVG.)	LUMENS PER WATT	RATED LIFE (HRS.)
INCANDESCENT	1000	23,740	N/A	23.7	1000
TUNGSTEN HALOGEN	1000	21,500	20,850	20.8	2000
FLUORESCENTS					
COOL-WHITE (CW) STANDARD 48"	40	3150	2770	69.7	20,000+
CW ENERGY EFFICIENT (EF) 4"	32	2700	2415	75.4	15,000+
CW EF 48"	40	3250	2960	74	12-15,000
CW 48" HIGH OUTPUT	60	4300	3740	62.3	18,000
CW 48" NO EF	55	4000	3480	63.2	18,000
CW 48" VERY HIGH OUTPUT	110	6900	5100	46.3	12,000
CW 48" VHO EF	95	6000	4440	46.7	12,000
WARM-WHITE (WW) STANDARD 48"	40	3200	2815	70.4	20,000+
WW EF 48"	32	2750	2460	76.9	15,000+
WW EF 48"	40	3250	2960	74	12-15,000
WW 48" NO EF	60	4300	3740	62.3	18,000
WW 48" VHO	110	6500	5000	45.5	12,000
MERCURY	1000	56-63,000	36-49,000	35-49	24,000+
HPS	1000	140,000	126,000	126	24,000+
HPS	400	50,000	45,000	113	24,000+
HPS	150	16,000	14,400	96	24,000+
MH STANDARD	1000	110,000	88,000	88	12,000
MH STANDARD	400	36,000	28,800	72	20,000
MH STANDARD	175	14,000	10,350	59	10,000
MH HO	1000	115,000	92,000	92	12,000
MH HO	400	40,000	32,000	80	20,000
LPS	180	33,000	N/A	167	18,000

Dear Ed,

I was wondering if fluorescent tubes dim before they burn out. How long are they supposed to last?

—Elevated

Crystal Palace, Ohio

Most 4' tubes have a rated average life of 15,000-20,000 hours at three or more hours per start. They emit 20 percent less light at 40 percent of rated average life. Most 8' tubes have a rated life of 12,000 hours at three or more hours per start. They emit 10 percent less light at 40 percent of rated average life. The tubes' life is shortened by frequent switching on and off. Tubes on continuously, or for 12 or 18 hour stretches, may last up to 1/3 longer than ratings.

Dear Ed,

When I moved my plants from a combination of fluorescent and incandescent spot circular lights to a 1000-watt MH lamp, the leaves drooped for a week. Why?

—Jack Stash

Marietta, Georgia

The plants were in shock from the tremendous increase of light they received daily. Leaves growing in different environments adjust their physiology according to environment. For instance, plants grown in lower light environments often have darker green leaves than those grown in brighter environments. Light spectrum also affects leaf color and presumably, the formation of chlorophyll and other pigments in the leaf.

The leaves probably drooped as a reaction to the light, which was too bright for them. By drooping, the amount of light hitting the leaf was greatly reduced. As the leaves adjusted to the light they resumed their normal position.

Outdoors, the leaves often droop during the brightest part of the day. They return to their usual position during the day when the sun becomes less intense.

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that represented the 8' x 8' matrix on the floor (See chart No. 2)

A 48" paraboloid (dome-shaped) reflector was used in the second test. The 1000-watt HP sodium bulb had a vertical orientation and was hung at three feet. All of the same procedures were followed to measure this lamp as the first test (See chart No. 3.)

Next, the same lamp was used with a horizontal reflector. This horizontal reflector was designed for maximum light reflection. All of the same procedures were followed in measuring this lamp as the vertical one (See chart No. 4)

The results were astonishing. A line was drawn connecting all of the dots on the matrix that had a value of 500, 1000, 1500, and 2000 footcandles (See charts 2-4.) As you can see, the horizontal hood has a much larger intense light distribution area. This lamp and reflector perform best with a light balancer. The 45" cone reflector is the old standard of the industry and we will use it as the basis for our comparison. The 48" paraboloid dome delivered 24 percent more light to the 8' x 8' test area than the 45" vertical cone. The horizontal HP sodium delivered a whopping 40 percent more light to the test area than the 45" vertical cone. (This lamp is so intense that the most efficiency is achieved with a light mover.)

Why is the horizontal orientation better? Look at the point source of light and how it is emitted. The light originates in the arc tube. The arc tube in the 1000-watt HP sodium is about 9" long and $\frac{1}{8}$ " wide. The arc tube, positioned vertically, emits light vertically to shine outward to the reflector. The light is then reflected down toward the garden. Most of the light the garden receives is less intense, reflected light. The vertical orientation of the bulb provides the garden with less light, and the light received by the plants is mostly reflected illumination.

Placing the HPS bulb on a horizontal axis directs half of the light generated by the long, narrow arc tube to shine directly down on the garden. The light generated by the other half of the arc tube must be reflected by the hood. But only half as much light must be reflected. The horizontal hood is inherently more efficient than the vertical cone or vertical paraboloid-shaped hoods.

The second series of tests concentrated on the vertical, clear, 1000-watt super metal halide bulb. The clear Sylvania bulb used in the test was brand new. The gasses in the arc tube were not totally stable. (Because the bulb was so new, light readings may have been a little more intense than normal.)

continued on page 83

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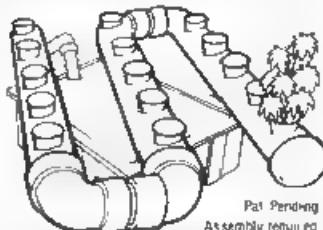
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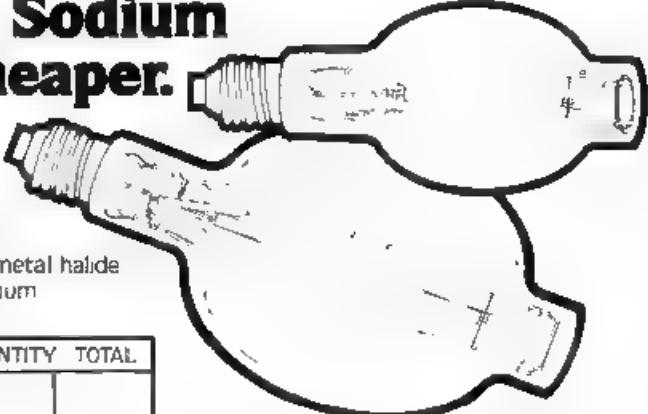
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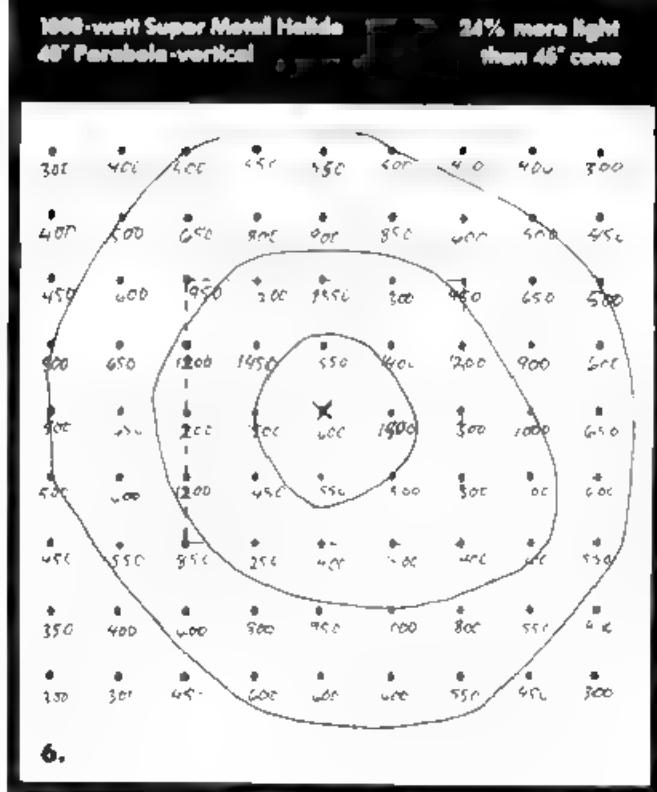
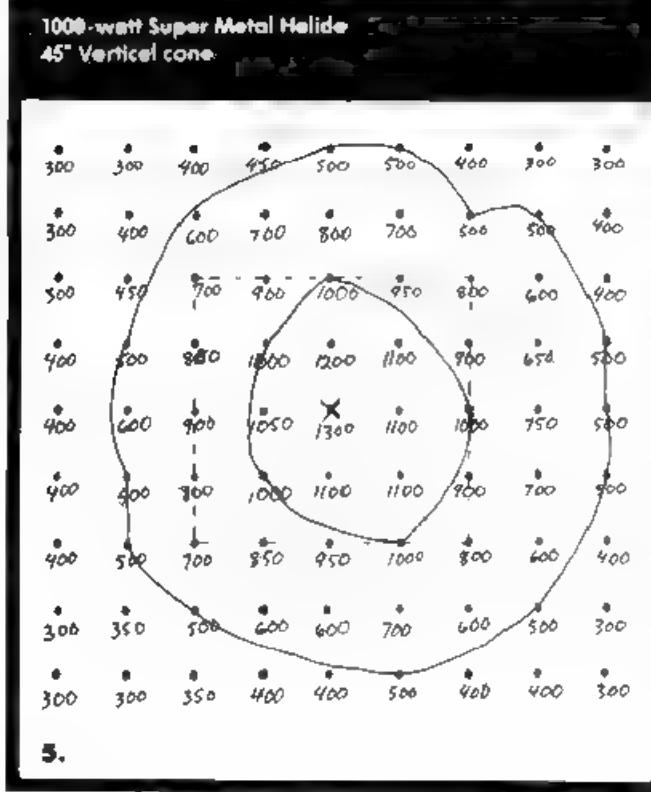
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continued from page 81

First, a 45" vertical cone hood was tested. The MS1000 bulb was hung at 3' from the floor just like in the previous HP sodium tests. Everything else was identical to the HP sodium tests (See chart No. 5.)

Second, a 40" paraboloid reflector was used with the same MS1000 bulb. All of the same measuring procedures were followed as with the 45" cone reflector. (See chart No. 6.)

Once again, the results were mind boggling. The 40" vertical paraboloid reflector delivered 24 percent more overall light to the 8' x 8' test area than the 45" vertical cone.

Horticultural Light Development: A Short History

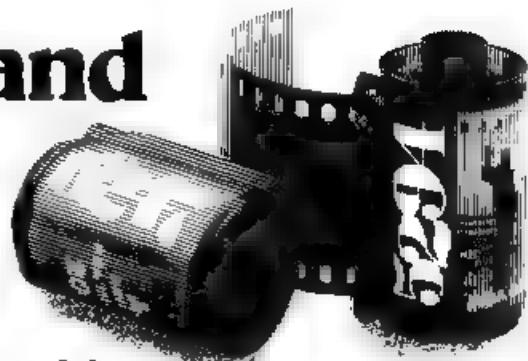
The horticultural lighting industry in the US used bulbs in a vertical orientation because they were using exclusively metal halide lamps. Metal halide lamps burn most efficiently in a vertical position. The lamps also produce a spectrum of clear light, similar to natural sunlight. Growers thought this spectrum of light was essential to healthy plant growth.

Growers knew the horizontal application was very efficient, but it takes a special metal halide bulb to hang horizontally. This bulb is about 20 percent less efficient than the vertical bulbs. When the gasses in a vertical metal halide arc tube heat up, they heat evenly throughout the arc tube. In a horizontal bulb, the gasses burn hotter along the top side of the arc tube. This extra heat requires a special horizontal bulb with a curved arc tube. This engineering requirement sacrifices efficiency by about 20 percent. However, by changing the orientation of the bulb, about 30 percent efficiency is gained, resulting in an overall increase in efficiency of 10 percent.

However, there are some complications to extracting this extra 10 percent. The horizontal metal halide bulbs require a special, expensive socket that locks the bulb into place so that the curved part of the tube is on top. If this curve is not on top, the bulb will burn out prematurely.

To date, a super (10 percent brighter than the standard) horizontal 1000-watt metal halide is nonexistent. However, there are MS 400's HOR's (Horizontal) available, and they cost about the same as the MS BU (Base Up) or BD (Base Down) bulbs.

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Dealer Inquiries Welcome



continued from page 68

This counter-intelligence operation, identified in the *New York Times* as "Operation 40," finally had to be closed down in the early 70s, after one of its planes crashed in Southern California with several kilos of cocaine and heroin aboard.

Both Rodriguez and Posada, like their close friend the Watergate burglar Eugenio Martinez, have been identified as members of Operation 40. The Fort Jackson trainees had their own, more restricted veterans' organization, the "Ex-Combatientes de Fort Jackson." Among those who took part in Hunt's first Watergate break-in, and were never arrested, were Angel Ferrer, the president of the Ex-Combatientes, and Felipe de Diego, identified in Watergate testimony as a member of Operation 40.

Eugenio Martinez, a close personal friend of both Rodriguez and Posada, was an active member of Operation 40 on the CIA payroll when he was arrested, along with his American handlers Howard Hunt and James McCord, for the Watergate break-in of June 17, 1972. In 1981 Martinez was pardoned by the newly elected Ronald Reagan, a little noticed event that may have heralded the cementing of the Reagan-Contra alliance.

The Reagan commitment to the contras has been unswerving. Modifications to his administration's policy have been limited to a search for better personnel, as Congressional opposition mounted to the contra record of raping peasants and torturing social workers to death. In September, 1982 the CIA reorganized the contra directorate, and sent a new station chief to Honduras, with the task of "getting the Argentines out and getting the war back under control." In late 1983 the CIA began its own covert operations against Nicaragua, cutting out the contras and reorganizing their FDN directorate yet again.

Since December 1985 it has become clear that the CIA contra

operation has become as intermingled with drug trafficking as the old CIA Cuban exile operations that had had to be closed down in Miami. In December 1985:

"...the Associated Press cited a CIA report alleging that a 'top commander' of the Costa Rica-based guerrillas had used cocaine profits to buy a \$250,000 arms shipment and a helicopter. ... Two Nicaraguan smugglers convicted in the largest cocaine seizure in West Coast history—430 pounds—admitted that they passed drug profits on to the contras.... A leading Bay Area fundraiser for the Honduras-based Nicaraguan Democratic Force, the largest contra group, was identified in 1984 by the Drug Enforcement Administration as 'the apparent head of a criminal organization responsible for smuggling kilogram quantities of cocaine into the United States.'"

The possibility that the contra operation serves as a cover for the Latin American drug connection does not seem to have occurred to the Reagan Administration. On the contrary, its pressures to resume Congressional aid to the contras this year were not deterred by the revelation that the FBI was "examining assertions that cocaine was smuggled into the United States to help finance the rebels' war effort." Since then, former ambassador Robert White has charged that the administration has attempted to kill this FBI inquiry. The stage has been set for a potentially explosive Senate investigation. •

Excerpted from *The Iran-Contra Connection*, published by South End Press, 116 St. Bartolom St., Boston, MA 02115. © 1987 by Jonathan Marshall, Peter Dale Scott, and Jane Hunter.

REBORN

by Jim Poling

REBORN

(Vestron)

With the resurgence of Dennis Hopper's popularity and the unholy mess of the PTL shambles you'd think this peculiar bit of pulp, currently gathering dust on video shelves everywhere, would have gotten a wider release. Granted, the premise is a lot more promising than it plays. Hopper, top-billed but regrettably given fewer scenes than co-star Michael Moriarty, is a frustrated televangelist who offers a "BankonGod" credit card on which donations can be charged. It's a dwindling business, however, until he latches on to an enigmatic Italian woman blessed by the stigmata, who is groomed and marketed by Hopper as the star of his traveling "Miracle Show." It's a golden opportunity for him but a wasted one for the filmmakers, who, despite a few nice disturbances along the way (including a sex scene as unsettling as anything in *BLUE VELVET*), drag the proceedings into a confused plot turn about the birth of Christ, a dove, and a helicopter.

Beth B, on the other hand, misses no opportunity in her new film, *SALVATION*, about evangelistic fascism and its white-trash followers. In fact, she crashes into each of those opportunities with no more grace or subtlety than the characters thrashing about on the screen, treating evangelism as though it were a new target for satire: It's actually old and easy. Jim and Tammy have just added a little more spice and proved that art is rarely as entertaining as real life. Now if only they'd sell their story to television. Casting hint: Connie Stevens and Rick Moranis.



But why wait for the Bakker's story when evangelistic horrors can be found in the following dirty dozen: Aimee Semple McPherson, the '20s radio evangelist who had it all over Jim and Tammy—her mysterious "kidnapping" and affair with a married man inspires Faye Dunaway in the telefilm *THE DISAPPEARANCE OF AIMEE* (1976). Aimee hysteria epitomizes Hollywood delirium by way of Geraldine Page in *DAY OF THE LOCUST* (1975), Agnes Moorehead in *WHAT'S THE MATTER WITH HELEN?* (1971), and Barbara Stanwyck raking in the bucks as *THE MIRACLE WOMAN* (1931). Harry Dean Stanton does two turns as an unholy preacher in the comedy *UFORIA* (1980) and the brilliant and severely demented *WISE BLOOD* (1979); Ellen Burstyn sees heaven and is blessed with healing powers making her life hell in *RESURRECTION* (1980); prostitute Sadie Thompson (Joan Crawford) brings the devil out of lascivious Walter Huston's fire-and-brimstone preacher in *RAIN* (1932); Burt Lancaster seduces lady evangelist Jean Simmons in *ELMER GANTRY* (1960); Anthony Perkins toting Bible and dildo in *CRIMES OF PASSION* (1984); backwoods nymphet Salome Jens enjoys the heavenly pleasures of George Hamilton in the little-seen and nearly great *ANGEL BABY* (1961); and Robert Mitchum, the most chilling of all, stabbing

Shelley Winters to death in the name of God in *NIGHT OF THE HUNTER* (1955).

NIGHT OF THE HUNTER

(MGM/UA)

This season's best video release played to empty theaters in 1955, gaining a strong and worthy cult following over the years. Robert Mitchum hawks the Bible in a small Southern town, murders the supposedly rich widow of an executed robber, and then goes after her kids. I especially like the second half, told from the children's point of view, which turns the story into a chilling fairy tale.

SOUL TO SOUL

(Atlantic)

Very good concert film commemorating the 14th anniversary of Ghanaian independence. Featuring Ike and Tina Turner, The Staple Singers, Wilson Pickett, Eddie Harris, and Roberta Flack.

FROM BEYOND

(Vestron)

Never captures the dementia of the director's earlier *REANIMATOR*, but the possibilities are here. An overactive pineal gland enables a man to visualize the sexual horrors of another dimension. Cuts to receive an R rating hampered the film's sick prospects.



CAPT. WHIZZO

IMPURE THOUGHTS (Charter)

Described by some as a "Catholic TWILIGHT ZONE," it's a slight but unusual comedy about four friends who meet in Purgatory while awaiting a decision on their eternity.

DEATH WARMED UP (Vestron)

Art-house splatter from New Zealand souped up in a high-tech, New Wave style. Reminiscent of REANIMATOR but without the humor, and is a little better for it. On a remote island a fascistic doctor is performing brain-damaging experiments in order to produce an army of Aryan deviates who slaughter on command. The plentiful violence is extreme even by American gore standards but it's closer to Mismi's notorious Japanese "Baby Cart" series—the blood doesn't just flow, it gushes in bright, candy-red fountains. Victims are disposed of seconds before the murders are telegraphed. Death is inevitable and quick in this film, but it's still a surprise. Despite all the exploitable elements it was a big failure in the US. Even gorehounds were soured by the lack of catharsis in the blood-letting. See it.

THE FLY (CBS/Fox)

David Cronenberg transforms a

campy '50s thriller into an agonizing metaphor for disease and dying. Except for a rather cheap dream sequence, Cronenberg avoids all the clichés of the horror genre, making a nearly great, discomforting film.

INTERNATIONAL HOUSE (MCA)

Vintage comic surrealism (1933) set in a baroque Chinese hotel. With a loopy disregard for narrative, a variety of celebrities crash through this lunacy with an improvised abandon: George Burns and walking non-sequitur Gracie Allen, Franklin Pangborn making a veiled pass at W.C. Fields, and Bela Lugosi and Cab Calloway singing about the glories of "that heavenly reefer."

BLUE VELVET (Karl/Lorimar)

Is it the best film of the '80s or the biggest joke ever played on audiences? Kyle MacLachlan is the Hardy Boy who discovers a severed ear in David Lynch's modern-day equivalent of Capra's IT'S A WONDERFUL LIFE. Ozzy and Harriet banalities collide with rancid perversions as the soul of a small town deteriorates. High art or low trash? Either way, it's unnerving and funny.

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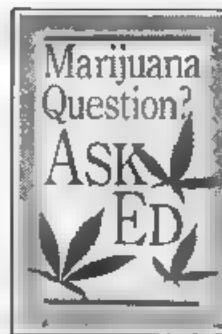
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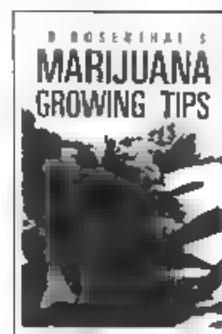


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ED'S RULES

continued from page 59

the garden in his basement. Several days later he was arrested by the DEA.

The grower should have followed a few basic rules. A "smart" suspect:

1.) Never talks to the police without having his lawyer present. Just because the police want to talk to him he does not have to talk with the officers. If told that he is not under arrest and is free to leave at any time, he exercises his rights and leaves.

2.) Informs his lawyer of any kind of harassment by the police.

3.) Makes sure he carries a valid driver's license or I.D.

4.) Makes sure that his car is registered, legal, and insured.

5.) Makes sure that his car is unsuspicious. Driving around in a Mercedes or a '63 Falcon might arouse a cop's interest.

6.) Keeps his car neat and does not keep any material in it that might implicate him as a drug user: no roaches, pipes, or residue.

7.) Keeps his house and surroundings unsuspicious by keeping the lawn and walks neat, and the house looking "normal."

8.) Does not invite over people who would arouse his neighbors' suspicions, and does not have a constant flow of people who might annoy his neighbors.

9.) Keeps himself neat and unsuspicious looking: no pot T-shirts or belt buckles.

If you are ever arrested for anything, follow these basic rules:

1.) Do not resist the police. Do not become verbally abusive, even if they are.

2.) Do not talk about the alleged offense or anything else. Silence is golden. Make no statements either true or false. Anything you say can and will be held against you. Do not try to outsmart the police in a verbal interchange. No matter how they try to open you up, KEEP YOUR MOUTH SHUT!

3.) You have a right to call an attorney. Use your rights. Do not talk to the attorney about the offense over the police phone. Do not mention any other names, even if you think that the police have no way of overhearing your conversation.

4.) Do not turn or flip. If your lawyer suggests that you do, fire him or her and find a different lawyer with more integrity. Many busts are made as a result of information gathered from information given by those being interrogated. Chances are good that if nobody talks, the government will not be able to make a case. ■

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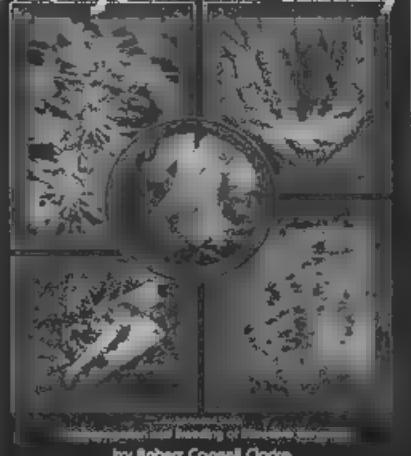
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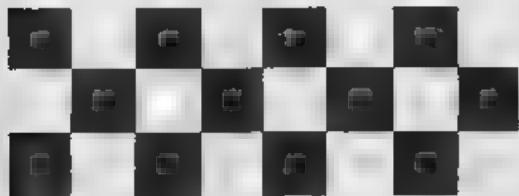
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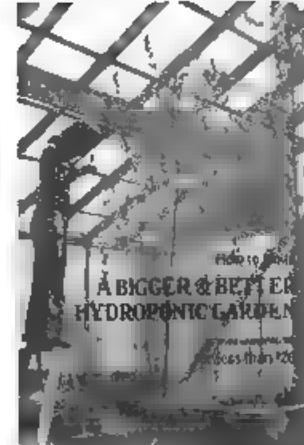
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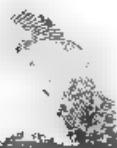
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LAST MONTH

1. LSD (JOINING IT, SUPPORTING IT, ETC.) 26. **NORML** (JOINING IT, SUPPORTING IT, ETC.) 51. WINES WHO ALSO DO DRUGS 76. 50,000,000 AMERICANS IS A HELL OF A NIELSEN RATING

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22. LED ZEPPELIN (THE BEST H.M. BAND OF ALL TIME) 47. FREE COKE (NOT THE COLA) 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. **HUSBANDS**

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24. MAGIC SHROOMS, SHROOMS, + SHROOMS (YOU KNOW HOW IT IS!) 49. **BIG TITS** (WITH BIG BROWN NIPPLES) 50. MONTY PYTHON

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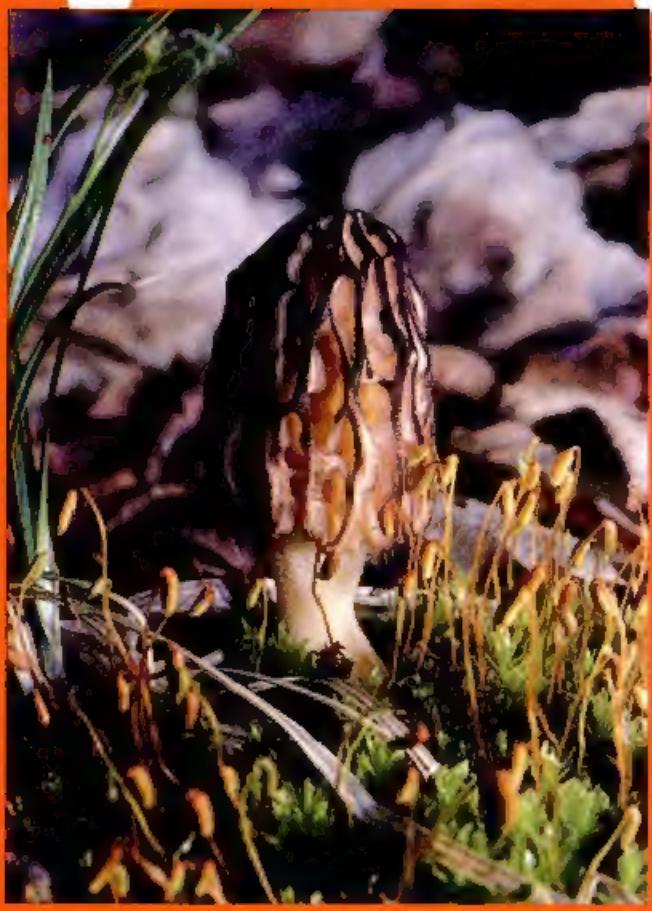
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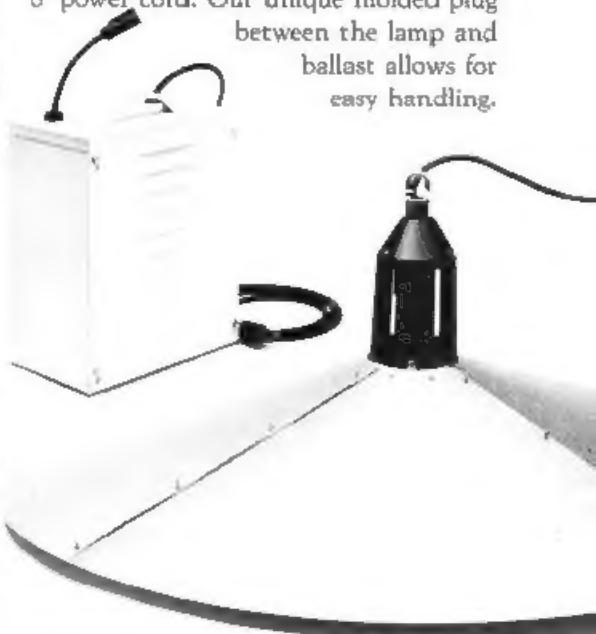
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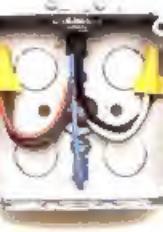
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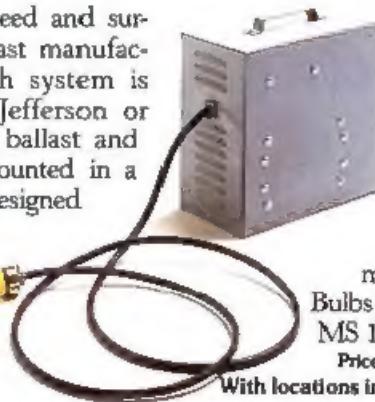
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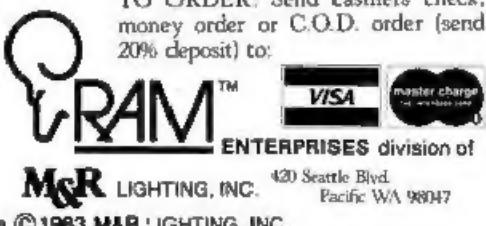
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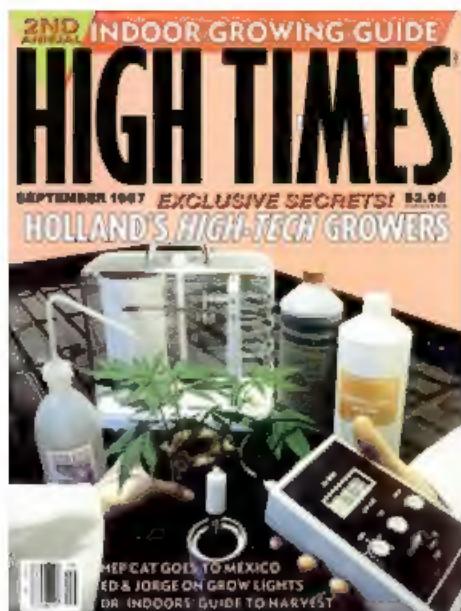


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